The Builder.

VOL. XXXIII. No. 1678. SATURDAY, APRIL 3, 1875.

ILLUSTRATION.

Todmorden Town Hall.—Mr. John Gibson, Architect 302, 303

CONTENTS.

The Future of the India Museum 291
Islington Union Chapel Competition 292
The Tower of London and the Romance of Art 294
Studying the Economics 294
Builders' Clerks' Benevolent Institution 295
New Vestry Hall and Offices at Hampstead 295
The Late Mr. F. Peck, Architect 295
The Improvements in Royal Mint-street and the Erection of Artisans' Dwellings 295
The Proposed Destruction of Pembroke College 296
The Supply of Water to the Kingdom 296
Accidents that Concern Us 296
The Yorkshire Exhibition at Leeds 296
School-Board Schools 296
Fever Dens in Bermondsey 296
Warwick Castle 296
The Development of Stoneware and other Fictile Material for Architectural Purposes: Architectural Association 297
Hints as to Sewers and Drains: Architectural Association of Ireland 298
Mr. Rogers, the Wood-Carver 299
Roman Houses: Foremen Builders and Clerks of Works' Provident Institution 299
Todmorden New Town Hall 300
The Late Mr. W. C. Aitken, of Birmingham 303
The New Pier at Egremont, Liverpool 303
The Museum of Decorative Art 303
Progress of Railway Construction: New Works and Buildings 306
Darlington Grammar School Competition 306
Wood Carving in English Homes 307
National Provincial Bank of England, Portsea 307
The Local Government Sanitary Poet 307
Dock Construction: the Institution of Civil Engineers 307
Effect of Cold 308
Pervious or Impervious 308
Liverpool Architectural and Archæological Society 308
Wages and Out-go in California 308
Working Men's College, Great Ormond-street 308
Proposed New Board Schools in the Rochdale-road District 308
Action by a Surveyor: Howell v. Hunt 309
Sub-Contractors' Liability: Patterson v. Ridsdale 309
Damages for Neglect: Cornelius v. Eglinton 309
Modellers v. Potters 309
Purchase of the Crystal Palace 309
The New Act-Drop at the Court Theatre 309
Church Building News 309
Books received: Page's Economic Geology (Blackwood); Variorum 310
Miscellanea 310

The Future of the India Museum.

IT was at a comparatively late date in the history of this country that private hands laid the foundation of those collections of the relics of ancient art, and the varieties of animal and vegetable species, which have gradually grown into the treasures stored in the British Museum. It is extraordinary how marked a contrast exists with regard to the respect paid to objects of monumental interest, or physical rarity, between the inhabitants of the British islands, and those of the Italian peninsula. The instinct of the uncultivated Englishman, man or boy, generally induces him to express his feelings towards any object of the kind which chance throws in his way, by a blow from a stick or a stone. In the uncultivated Italian, we may feel disposed to smile at the reverence with which he regards some dubious morsel of *antichita*. But as to which form of ignorance is the least ignoble, and which the most obnoxious, there is no ground for hesitation.

The invaluable boon which is offered by the British Museum to the students of mineralogy, palæontology, natural history, monumental history, and classic art has been worthily supplemented, within the last quarter of a century, by the establishment and maintenance of the museum of South Kensington, and its succursal institutions. In these valuable collections, art-schools, and art-libraries, is perceptible the influence of a central principle different from that which regulates the elder museum. The lofty lessons of literature, of history, and of high art, are those for which we find the illustrations aptly collected in Bloomsbury; industrial art, and all that may tend to elevate the taste and ennoble the motives of the artisan, form the *ratio entis* of South Kensington. There is ample room and space for both. The old adage as to two shops making a market was never more worthily illustrated. Fine art, pursued for its own lofty and pure fascination, lends a sisterly hand to industrial and decorative art; of which the first object, indeed, may be humble, but which, as an educational element, is now filtering into many a home that would have been sealed against any mere abstract influence.

A third order of museum, exhibition, or institution for teaching by the eye is now calling for attention. Its claims, if simply and lucidly brought forward, are not weaker than are those of either fine art or industrial art. As a general classification, we may use the term "colonial art" for that to which we now refer. It is true that what we have chiefly to regard, at this moment, concerns the art and industry of one of those ancient seats of a race akin to our own, which, by revolutions that would have seemed miraculous if they could have been foretold, has passed under the dominion of the British Crown. The subjection of the vast empire of India to the monarch of this little country is, if regarded in the abstract, one of the wonders of ethnological story. Princes whose independent, although not supreme, sovereignty, is traced, according to their own claims, through a male descent of ten thousand years, acknowledge the suzerainty of a line which, to count months of existence against the Indian years, has fallen repeatedly to the spindle. A population counted by hundreds of millions is subject to the magistrates of a people counted by tens of millions. It is difficult to show any parallel in history to the magic story of the growth and spread of the British power in India.

It has long been matter of regret with all those who bestow any anxious thought on the future of the United Kingdom, that India, to the majority of Englishmen, is little more than a splendid and indistinct name. The very magnitude of our Indian empire makes the study of Indian affairs oppressive. How many of us, on glancing at the subjects of the leading articles of the morning papers, find the eye instinctively averted from any one in which we catch sight of the name of India. Very recently, indeed, there has been an Indian subject of sufficient attraction to demand telegraphic transmission of details in some extent. But it is as an incident of rare dramatic interest, from the dignity and splendour of the actors, rather than as a matter of real domestic concern, that we have turned to the latest reports of that unexampled act of sovereign judicature, the trial of the Guicowar of Baroda.

It cannot, however, be denied that the prosperity of our Indian Empire is a matter which comes home to our own future interest with a reality as actual as in the case of an Irish county. The position of Great Britain, as one of the first powers in the world, is due, in no small degree, to the fact that the Sovereign of these islands is Mistress of a sixth part of the human race. All our possessions and dependencies might be crammed into a corner of that vast tropical peninsula. Our sons, brothers, friends, sailing, in early youth, from the shores of this country, are no longer as removed from all immediate communication with us at home as if they had been carried to the moon. Through the ancient channel of Indian wealth and commerce, up the channel of that Red and steaming sea which wafted ivory, apes, and peacocks to King Solomon; through that marvellous canal cut by the untiring energy of De Lesseps; our splendid steamers now pass with a swiftness and a regularity that were not attained by our communications with France or with Holland before the accession of the House of Hanover. To this is added the somewhat costly, but marvellously swift, service of the electric telegraph. In no respect have the labours of Watt, Stephenson, Brunel, Wheatstone, and their fellow-labourers, wrought a more marvellous revolution in our condition, than in the manner in which distance to India is reduced, for actual travellers, and annihilated, for the transmission of important intelligence.

Influences of this nature, however, are slow in percolating the general mass of English society. If we may take an analogy from mechanical science, we should say that the transmission of information about India through the English nation follows a law very similar to that which regulates the transmission of heat through water. This, as our mechanical readers will not need to be reminded, is altogether different from its transmission through vacuum, air, or solid substances. Conduction is absent, or at least very feeble. The contagious warmth does not freely pass from particle to neighbouring particle. Establish a current, indeed, as when fire is applied to the bottom of a kettle, and each heated and expanded bubble rapidly and noisily makes its way to the surface, and by the individual selfish hurry and rush of each of these independent bubbles the whole mass is soon raised to boiling point. But it is by the actual contact of particle with particle, due to change of place, as distributing the dose of heat, that the work is effected. Even so is it with regard, not to India alone, but to the Cape, to Australia, to Canada, to each of our numerous colonies and dependencies. Mails and newspapers from these stations affect the majority of us little more than the rays of a burning glass, concentrated on the surface of a vessel of water, affect the particles half-way down. But when a relative or friend comes back from these distant regions to the chimney-corner, or when some great writer or speaker comes before us full of the incidents and the experiences of his own travel, we are apt suddenly to awaken to the vast interests of which we ordinarily think so little. It would be unwarrantable to say that the future welfare of England is entirely dependent on that of her colonies. But it is certain that the form which the power, wealth, and civilisation of this country will have assumed half a century hence, will be to no ordinary degree moulded by the results of our colonial policy.

It is, therefore, the case that any well-considered attempt to bring before the very eyes of the public of Great Britain the actual condition of India, deserves the most earnest support. And an attempt, not only projected, but carried out, year after year, to place in the hands of the manufacturers of this country the products of Indian industry, and in the hands of the artists of this country the masterpieces of Oriental art, is one that demands the support of the statesman, no less than of the philanthropist.

From time to time we have given to our readers some account of what was in course of execution, with the view of familiarising the English student and the English manufacturer with the art and products of India. What has

been most successful in this respect, we take to have been the Indian Court at the International Exhibition. Amongst the names of men who have patiently, perseveringly, silently, and efficiently laboured in a work of sterling patriotism, that of Dr. Forbes Watson will long deserve very honourable mention in this country as well as in India. The lucid arrangement, and admirable descriptions of the objects of Indian origin that from time to time have been brought together at South Kensington, have, no doubt, done more to give the thousands of middle-class Englishmen some definite notions of India than have the noblest efforts of the historian, the statesman, or the orator. Indeed, we have seen in the later Exhibitions in these courts,—and seen with dismay and perplexity,—clearer proofs of the influence of England on India than can be readily elsewhere cited. We say with dismay, because the influence to which we refer is undesirable. It is not the elevation, but the degradation, tending to the extinction, of Indian art, that is heralded by the substitution of cheap English effects for the quaint and ancient blendings of form and colour natural to those children of the sun. One of the points which particularly struck us, in this respect, was the introduction of some of the more glaring aniline dyes into Indian fabrics. It is true that some of these colours are extremely rich. But any one who regards them attentively must be aware of the strong family likeness that subsists among them. In all shades of red,—violet, blue, and the cognate hues,—the same metalline sheen or under-glow is apparent. The substitution of this group of colours for the "mat" colours, whether subdued or splendid, that we are accustomed to see in Indian fabrics, is a retrogression towards barbarism; at least, so far as it has yet been carried out.

Our readers have been often told, without having derived much practical benefit from the information, that those charming and glittering courts at South Kensington have only been the succursal and the subsidiary of the Indian Museum, which, after various chances, found itself perched in the attic of one of the new Government buildings between Parliament-street and St. James's Park. A climb up those numerous stairs was richly repaid; but who climbed? The door of entrance was anything but inviting. It seemed to require the attendance of one or two of those carefully-dressed loungers who lean against the doorposts of the great establishments in Manchester, to hail their wonted customers, to snap up chance visitors, and to overwhelm with the shame of detection any friend of their own who might have been so bold as to "look in" on a rival. In a word, the position of the Indian Museum has been so much the reverse of advantageous or tempting, that the permanent interest of that great colonial empire, and therefore the permanent interest of England at large, have suffered materially from the miserable and extravagant cheeseparing that refused to find a proper site for the museum.

The subject now comes before us with the greater interest, that the contents of these respectable but inaccessible garrets are in course of removal to South Kensington. They are to be displayed, for a time, in the Eastern Galleries built for the proposed Perpetual International Exhibition. Hereafter it will not be thought one of the least good services for which we shall have to feel thankful to Sir Henry Cole, that he has provided so convenient a temporary home for this precious collection. While the lighting of these galleries is especially favourable to sculpture, we do not doubt that it will be found appropriate for the purpose of the better display of the treasures of the Indian Museum. Nor is it a small matter that the locality thus suggested is already familiar to sightseers, and to country visitors to London,—a remark which does not apply to the former situation, at least as a place of display.

The temporary migration of the collection, however, though in itself a good thing, is only a part of that good service which Dr. Forbes Watson is anxious to render to our Imperial Province. As at South Kensington the value of the Museum has been enhanced manyfold by the addition of an Art Library, while the Library has living illustration added to its silent wisdom by the neighbourhood of the Museum, so it is now proposed to establish side by side an Indian Library and an Indian Museum. Collections of various kinds have been accumulating for many years. Great part of them has been as inaccessible to the public as if they had been at Calcutta or at Bombay. Among the various collections, the elements of a great Public Indian Library are far from being the least important.

The printed books which may be said to form the rank and file of this library are already 25,000 in number. To these have to be added as many as 5,000 volumes of what may properly be called State Papers, consisting of records, surveys, reports of all kinds, and gazettes. More than 8,000 Oriental manuscripts, some of them richly illuminated; and numerous works in the various dialects and languages of Hindostan, have also to be considered. The collection of coins furnishes an independent chapter in the history of this great centre of the earliest development of the Aryan race. Maps, plans, charts, and all the geographical and topographical information which has been collected and reduced to graphic form by official surveyors and the officers of the Royal Engineers, form yet another branch of this most valuable educational library. Educational, we mean, in the statesmanlike sense of the word.

The chief departments of art and manufacture, illustrated by the collection of specimens, will suggest themselves to our readers more naturally than the chief branches of the Library. We have seen but little of what is waiting to be displayed, but that little is enough to convince us of the paramount importance of bringing the whole collection fully before the public. The infinite patience of the Hindoo has made him master of a metallurgic art unrivalled unless it be in Japan. Exquisite filigree work, in brass, iron, silver; inlay of metal in metal, of ivory, tortoiseshell, and metal, in wood; pierced work in the fine and durable "blackwood," in the production of which two or three human lives have been devoted to the completion of a single table or couch; jade, a silicious mineral as hard as the flints of our chalk beds, tortured into every fantastic form, gleaming with its peculiar subdued lustre in cups and vases, or wrought into foliage as minute as that of the *lycopodium*; inlay and carvings in agate, marbles, and the once fabulously prized amber; pottery of quaint and varied forms and textures; carvings in ivory, ebony, horn, shell, and sandal wood; lacquer work, in which the juices of vegetables unknown to the Western world are compacted into a solid and durable coating of cane or light wooden objects of daily use; all these are abundant. Textile manufactures range from the thick silks, firm and solid as boards, and dense with twined gold and rich with colour; strong serviceable cotton fabrics, which a band or edge of some quaint pattern lifts at once above the level of squalor; and that woven gossamer, so delicate that when a princess came into her father's court clothed in seventeen thicknesses of it, one over another, the emperor sent her away to put on some more clothes. Such are some of the treasures we have before described. With regard to this last fabric, we can say that a piece of it, of above a yard in width, not only will draw through a very small ring for the little finger, but will allow the top of the finger itself to be inserted in the ring, together with the fabric.

It is the wish of Dr. Forbes Watson not only to appeal to the eye, by a rich and well-ordered museum, not only to store the mind by the contents of the library, but to give voice to the collection by means of well-delivered lectures. As to this we shall hope to have further opportunities of receiving and of communicating information.

It is not to be forgotten that a very serious builder's question will arise as to the future home of these important collections. The subject of their location is not a simple one. It may be too late to suggest the idea that some day we may have a sort of *Pays Latin* in London, a quarter allotted to educational structures of various kinds. The present division of these institutions is very unfortunate. The position of the British Museum is not one that would have been originally selected, if any idea of the growth of London could have been arrived at by anticipation. South Kensington, again, has disadvantages as well as advantages as a site. The chief disadvantage, however, arises from the want of centralisation. A student may have occasion to search for some literary or artistic treasure, as to which he is not aware in which of our great museums he may find it. He would naturally first seek the art library at South Kensington, as more accessible from its compass, as well as from the aid given him by its courteous librarian, than is the case with the larger and more comprehensive library at Bloomsbury. At South Kensington, it may be, he would discover for what volume he has to ask at Bloomsbury. Again, he might seek in the galleries of the latter establishment for illustrations of Mediæval art, in search of which he would thence be attracted to the larger collection at the Industrial Museum. These are but instances of what is continually occurring. For the public, there can be no doubt, the value of our educational institutions would be much enhanced by their proximity. As it is, when we see one great centre of intellectual light at Bloomsbury, another at South Kensington,—a seat built, in the hope that learning would occupy it, in Gower-street; another crammed under the wing of Somerset House; pictures in Trafalgar-square and at Kensington; sculpture nowhere, so far as a properly lighted and constructed glyptothec is concerned; anatomical and antiquarian collections in Lincoln's-inn-fields; Indian treasures, till now, in a garret in Westminster, it is impossible not to feel regret at such a distribution of very precious stores as deprives them of great portion of their value.

All things considered, we think it probable that it is towards South Kensington that the future educational buildings will gravitate. It may or may not be the best course; but we think it is the most probable one. The Thames Embankment, indeed, possesses great advantages as a site; still, it is questionable whether they are enough to over-balance the disadvantage of the creation of a new point of pilgrimage for the student. As regards local claims, we have an example of a proper attention to that important requisite at Bethnal-green. We have a more questionable instance in the ill-attended-to collection of armoury at the Tower. We are rather indicating some of the chief considerations that bear on the subject of site, than offering any positive opinion. We do hold, however, that it is important to have the subject fully and ably discussed, with the aim not only of deciding on the best site for the India Museum, Library, and Institute, but of ascertaining the principle on which the centralisation or decentralisation of the educational institutions of the metropolis should for the future, as far as practicable, be carried out. Our own impression, notwithstanding the opinion expressed by Dr. Forbes Watson,* is strongly in favour of South Kensington as the site for the permanent building to accommodate the India Museum, Library, and Institute.

ISLINGTON UNION CHAPEL COMPETITION.

THE Committee for rebuilding the above-mentioned place of worship requested designs in competition from seven architects, which were sent in on the 21st of January. The proposed new building is to take the place of a respectable and melancholy Classic "compo" structure which at present forms the central object in the row of houses called Compton-terrace, in Upper-street. The requirements were a chapel to contain sittings for not less than 1,650 persons, together with schoolrooms, a lecture-room, a ladies' meeting-room, &c. Special attention was requested to ventilation and acoustics. The entire cost was not to exceed 15,000*l.*; and in order to ensure proper consideration of the plan, Mr. Waterhouse had been engaged as professional assessor, "to advise upon the details of the instructions, and to determine which of the designs conform to those instructions; and to advise the committee as to the relative merits of the designs submitted." The successful competitor to carry out the work, and the authors of the remaining plans to receive 50*l.* each; this sum, however, to be withheld in the case of any design which, in the opinion of the assessor, could not be properly carried out for within 10 per cent. of the amount named.

This should appear to have been intended as a model competition, from the provisions; but competitors cannot be satisfied to keep to the sums named in conditions. There are two contrivances for dealing with these vexatious restrictions: one is, to boldly go in for a larger sum than has been stipulated, and give specious reasons why the committee are really in duty bound to spend the architect's amount rather than their own; the other is to dignify a design with towers and other accessories, which carry the cost far beyond the limited amount, and then to point out in the report that these can be

* On the Establishment, in Connexion with the Indian Museum and Library, of an Indian Institute. By J. Forbes Watson, M.D. London: W. H. Allen & Co. 1875.

omitted if it is thought necessary to keep the building within the cost named by the committee. Two out of the seven competitors have adopted the first course, and three the second; which is the commonest and, as it seems to us, the most reprehensible of the two, as it is really a system of attracting notice by features which are not intended to form, and by the terms of the competition have no right to form, a part of the design to be considered. A professional assessor, of course, is not taken in by this; but he is left in the difficult position of having to set the conditions on one side, or to pronounce the majority of the drawings inadmissible.

"Torcello," it is understood, is the design which has found most favour with the committee and their adviser, and will probably be selected if its author can so far modify it, in regard to costliness, as to reduce it from the 19,000*l.* (nearly) at which he estimates it, to something near the sum named in the conditions, without materially injuring the plan and design. This is, of course, a most irregular proceeding, and has the misfortune of giving to the authors of designs, inferior in merit, a legitimate ground of complaint. Otherwise, we cannot find fault with the choice. The plans, based on that of Sta. Fosca, Torcello, will work admirably as a combination of architectural effectiveness with suitability for congregational worship, which, as we have often observed, is best served by an *area* rather than an *avenue*. The ground-floor seats are arranged in concentric curves; the gallery front forms an octagon (with straight-lined seats), and the roof over takes the octagon form, with a small lantern at the apex. The galleries and centre part of the roof are carried on stone piers, of sufficient dimensions for satisfactory architectural effect, and the seats are so arranged that the piers scarcely obstruct any of them. It is gratifying to see this accomplished without having recourse to the unsatisfactory iron columns which nearly all the other competitors have fallen back upon. The galleries are made to appear as an integral portion of the interior design, and acoustic conditions are expected to be fulfilled by the comparatively low roof. A peculiarity of the plan is that the class-rooms are half below ground, space being found for them under the chapel floor round the external portion of the building. A great saving of space is the result, but the arrangement seems open to objection, and takes the class-rooms very far from the main school-room, at the back on the upper floor. The style is Lancet Gothic of a French type, with a tower, with lantern and short spire over the entrance; the general effect is solid, but somewhat bald and heavy; it presents opportunity, however, for working out better in detail. The author infers in his report that he was hurried in his preparation of the drawings, which indeed show evident marks of haste. The lecture-room will certainly have to be reconsidered on acoustic grounds; it is merely a square room with four flat walls. In other respects the plan, exceedingly simple as it is, shows a very just sense of the practical requirements of the case, combined with good and suitable architectural treatment in regard to the interior especially. We should wish to see the external design considerably refined in detail before it is carried out, but in general composition it is very satisfactory. Every attention has been given to warming and ventilation; the latter being assisted by exhaust ventilators in the tower (for the chapel), and in the lantern over octagon (for the class-rooms).

"Off the Beaten Track" may claim its title as a competition design intended to be executed within the stipulated sum, and which "three respectable builders" have estimated as within that amount. As a general rule, "respectable builders," in such cases, know pretty well what is expected of them; but the design does appear capable of being carried out for 15,000*l.* In other respects, it is not off the beaten track in any marked degree. The style may be called Romanesque, half modernised, half classicised; the centre portion of the front, of which a large drawing is given, is well treated. The plan shows a continuous corridor all round the chapel, a favourite arrangement with the competitors apparently, and a very good one in regard to readiness and ease of access. The galleries of the chapel are over these corridors, not projecting into the main apartment except by a slight bracketing over; they are carried on iron columns from the basement, so that the corridor walls can be removed, and the space thrown into the chapel in case future extension of area is desired. The plan of the chapel does not show any attempt at special arrangement of the seating, so as to combine effect with convenience. The best part of the plan, and one which has attracted a good deal, we believe, of the attention of the committee, is that of the schools in the rear of the chapel; this portion is very well arranged and compact. The idea which seems to be coming up a good deal at present of making the class-rooms above part of the schoolroom, with an open gallery or balcony of communication round, is here carried out. The lecture-room, with its two flat and unbroken end-walls opposite each other, could hardly be found acoustically satisfactory. The interior treatment of the chapel, with its plastered roof broken into two or three planes, looks better in regard to this point, but hardly has anything else to recommend it.

"*Au Fait*" is a design of Italian Romanesque type, with "many stripes," somewhat weakly though heavily treated; the terminations, or lanterns, of the campaniles are very questionable. The seating is arranged in concentric curves struck from a radius some distance behind the preacher. The interior of the chapel is well treated, with coupled iron columns carrying substantial arches, and with a moulded tie-beam roof. The entrance is by a kind of narthex, but on entering the central outer doorway we find ourselves behind a screen following the line of the seats, and presenting a convex curve. This is a very undignified way of arranging an entrance, leaving an awkward shape on the plan of the porch, and entirely destroying architectural effect. The arrangement of the back portion, school and lecture rooms, appears satisfactory. The lecture-room is on the ground-floor, and reached by a corridor from the front street, to the right of the chapel. The seats here are also arranged in concentric curves, with a rapid rise from front to back. The lecture-room in this design gives better promise acoustically than in the last-named plan, and the chapel not so good. In the latter some special consideration has been given to the arrangement of the pulpit, which is less cribbed and confined than usual, and is entered by a passage on a level with it, instead of a staircase to be climbed in face of the congregation. The figures sketched on the seats of the lecture-room and chapel sections afford a rather sorry specimen of the kind of thing which draughtsmen take for wit.

"Hearing, Seeing, Breathing," is a good competition motto, but might be as fairly claimed by other competitors in the set. The design might be described as Italian treated Gothic-wise, in a manner we have seen elsewhere; it is well carried out, though not to our thinking an interesting or captivating design; nevertheless, quiet, and very suitable for the purpose. Curved seats, with a very large radius, are here again the principle of arrangement in the chapel. The mode of entrance presents the same rather mean effect which we noted in the last; a dignified-looking exterior doorway leading only to the back of a screen. Without ignoring the importance of keeping out direct communication with the outer air, it is surely possible to do this so as to give complete architectural character to a vestibule. One campanile alone is shown on one side of the elevation, the other side being cut short, though commencing from the ground symmetrically. The campanile is an "extra," and if not built, the building on this side is to be finished as on the opposite side. At the same time the author refers to the campanile in his report as being the extracting shaft for ventilating the chapel; a specimen of the inconsistencies into which architects fall when they try ostensibly to comply with, and really to evade the conditions of a competition. The chapel is satisfactorily roofed for acoustic purposes, but the galleries are very deep, especially opposite the pulpit, where the hearing, both in the gallery and below it, would be likely to be unsatisfactory. The school and class-rooms are on the ground-floor at the back, and the lecture-room on the upper floor.

The last-named plan seems to want distinct aim rather; the next, "One Focus," perhaps emphasises a theory a little too much. In this the pulpit, near one end of the interior, is the centre from which all the lines of seats are struck, the nearest forming a complete circle round the pulpit, and the same curve carried back the whole extent of the area. The interior perspective sketch shows the circular line carried out everywhere, in the roof, the plan, the apse, and the large organ towering behind the pulpit and tribune; there is a certain degree of genius about the conception, which would give a fine unity of architectural effect, without, as far as we can see, any sacrifice of practical advantages. The lecture-room is central, and immediately behind the chapel, also with the concentric idea carried out, and the class-rooms open from a gallery of communication running round it. A large schoolroom occupies nearly the whole of the back space upstairs, over class-rooms and lecture-room. How far the direct connexion of the class-rooms with the lecture-room suits the wishes of the committee we are not aware. The ground-floor plan of this portion is very compact, and additional air space is secured by leaving the entrance-passages to the schools "open to the sky" for some little distance into the area of the building. In regard to the chapel plan, the author professes to have aimed at a combination of the Greek theatre with the basilica. The "light and sound shadows" of the columns are shown as almost entirely thrown upon passages and avoiding the seats. The staircase accommodation is ample. For the interior decoration a stencilled roof, wall tiles in the clearstory, and an inexpensive and unostentatious treatment of the window-glazing are proposed. Externally the design assumes what seems to be the prevalent style in the competition, a variety of Romanesque, well treated, richly but not heavily, with a small truncated tower at one flank, and the same design carried up on the other side with an octagon stage and a short circular spire. The break from the square to the octagon is harshly managed, but otherwise the feature is architecturally very effective. This it is adroitly proposed should be a private gift, so as to take it out of the limited amount to be expended. The drawings are admirably got up, and show the hand of a true architect in the union of practical considerations and good planning with architectural unity of effect. The statement as to ventilation is very full and satisfactory.

"Faith" shows a design of Romanesque type, which he considers "peculiarly suited to Nonconformist places of worship," as escaping the charge of copying the structures of "the church." The main feature externally is a campanile with a short four-sided spire and a very heavy oversailing cornice. The plan shows a continuous corridor round the chapel and a vestibule right across the front, giving access at each side to the gallery stairs, and in the centre to the main floor. The planning of the accessory buildings is not very satisfactory. The chapel is roofed with a panelled plaster ceiling, a barrel vault with circular lights in some of the panels; this would be susceptible of good decorative effect, though the appearance is a little heavy. The author has hardly studied ventilation philosophically; his "seven openings" in the roof would be as likely to cause down-draughts as up-draughts.

"Progress" deserves all recognition for the industry and enterprise displayed in the elaborate and beautifully-executed set of drawings furnished, including line perspectives in pencil from nearly every point of view, coloured drawings of details, and a large-scale drawing of the whole front. The effect of the front, as shown on one of the perspectives, is very picturesque as a general composition, with a rather pretty flèche of open-work as the crowning feature. But here, we fear, praise must stop. The details are quite below the mark, and the style, avowedly Gothic, seems made up of bits from various Gothic periods put together with little congruity. The author has evidently gone in to win through the magnitude and multiplicity of his drawings; and the fact that in spite of this the selection seems likely to fall on the roughest and least finished set of drawings sent in should be a lesson to him, and an example to other competition committees and assessors. The more it becomes recognised that a competition ought to be settled according to *what* the drawings show, and not according to *how* they show it, the better for all competitors, who will gradually have to find, we hope, that they will gain nothing by this kind of abnormal expenditure of time and trouble on costly drawings, which are totally unnecessary for the avowed object of a competition. At the same time we cannot conclude our remarks without expressing again our regret that another should be added to the list of competitions in which the conditions are thrown over,—conditions which it is perhaps wiser not to lay down so precisely in the first instance; but which, once laid down, the promoters are under a distinct obligation to observe.

The author of the favoured design is Mr. James Cubitt. The other designs stand as

follows:—"Faith," Messrs. Lander & Bedells; "One Focus," Mr. T. Roger Smith; "Seeing, Breathing, and Hearing," Messrs. T. & J. Steane; "Au Fait," Messrs. Paull & Bickerdike; "Off the Beaten Track," Mr. Thomas Lewis Banks; "Progress," Mr. Finch Hill.

THE TOWER OF LONDON AND THE ROMANCE OF ART.

THE world is a very long time in getting rid of its old remembrances. If it be difficult to found and build up a new state, and to build on it, and to thus make a material impression on its surface, whether "unsculptured" quite or not: it would seem to be more difficult still to get entirely rid of these remains and old remembrances. This is a truth all the world over, and in no part of it more true than in these islands, sea surrounded as they are. Such evidences and remembrances of the past are, as all know, all round us in one form or another, and of divers degrees of historical interest and homely association. Indeed, do not they all put together make the country what it is. Now, among these memorials there is not one more world-famous and full to the brim of recollections than the Tower of London. More of the history of the country has been acted in and about it, and connected with it, than in any other building, or on any other spot within its wide extent. As the Tower is to be now somewhat more accessible to the general public, a few notes on some but little observed features in it may be of interest.

It might be a matter of no small interest, and might conduce to clearness, to say somewhat on the general disposition and build of these Middle Age towers, or castles, at one time to be found all over Europe. They were among the necessities of the times, and told of the conflict of hostile races, and of the divisions in society. Saxon and Norman fought round and about them, and in them,—indeed, romance itself has never been able to find subjects more suitable for its purpose than those castles and the doings festive and warlike in them. The Tower of London is one of these castles, or strongholds, of the feudal ages; and that it should have lasted till to-day is a very surprising thing indeed, when we come to think closely of it. It is well worth a few moments pausing over. Gundulph, Bishop of Rochester, was a military architect, as well as a churchman, and it was he who built the Tower of London, for William the Norman, in the year of grace 1079–80. We refer here to the Inner White Tower, or keep. It measures, to give rough dimensions, 116 ft. from north to south, and 95 ft. from east to west, and is 92 ft. in height. To describe the outside of it is needless, for all know it well; but the interior of it is not by any means so well known, or so familiar, and to it we would call a moment's attention.

It is to be noticed, in the first place, that there are three stories in the white tower, and that a wall 7 ft. thick divides the three stories from the base to the summit of the building, which, by the way, is covered with a flat lead-covered roof. Another wall extending east and west divides it again into unequal parts, thus forming in each story one large apartment and two smaller ones. These quaint rooms, so unlike to anything now-a-days designed or built, are in use as armories and arm store-rooms. The very form of the rooms is unfortunately thus lost by the way in which the open spaces are filled up with rackets for the vast multitude of arms of all sorts that are "stored" up in them. To our minds, this seems not a little unhappy, for the quaint and special interest to be found in these apartments is so great that the mere bare time-marked rooms would be a show in themselves; and these arms in them would doubtless show to much greater advantage in some more open apartment, where their very number might be at once visible, and patent to the gaze. These rooms go by various names, such as "Queen Elizabeth's Armory," and so on. In this last, which has a vaulted roof, there is a curious doorway leading to a cell, 10 ft. long and 8 ft. wide, formed in the thickness of the wall, and getting no light but from this doorway. Of course there is a tradition about this narrow prison-cell, as there most surely ought to be, and this Tower is crammed full of all sorts of traditions, dark and gloomy enough some of them. Herein we may read how much and how long human nature may be made to suffer; and how in some cases it triumphs over all ills, however fearful. Sir Walter Raleigh, one of those men who make their mark in the world, is said to have written his "History of the World" in this narrow room. We can hardly think it, looking at matters in a practical, and pen-and-ink light, but will not disturb the tradition. This room, narrow and dark as it is, also contains, partly on its walls, the records of the memories of Rudston, Fane, and Culpeper, men implicated in the Rebellion in 1553, of Sir Thomas Wyatt, and which, as all know, proved so fatal to Lady Jane Grey. No further account has time rendered of these prisoners, but they picture themselves to the mind's eye as you look into their cell. Sir Thomas Wyatt himself perished on the scaffold, on Tower Hill, in the year 1553.

Over this apartment,—for we must note a few details to show how much there is in the famous Tower, and about which so much has been and might be written,—and occupying the whole space from the first-floor to the roof of the building is the chapel of St. John, a right notable place in itself, and worth a more than passing glance and thought. It is a Romanesque or Norman,—we are unwilling to drop this last expressive word from the architectural nomenclature,—specimen of church architecture. The place may well be proud of it. It is, indeed, a miniature cathedral, with a regular apse, semicircular on plan. It has a central nave and aisles, with round columns and arches, and clearstory, and semicircular rough stone roof. A really remarkable building in very many ways. We spent some time in this silent, bare, and deserted chapel when last there, and could but people it with its ancient and mail-clad congregation, for they must here have needs been all "fighting men." A chaplain here, in its prime, constantly performed mass, and for this, as the record of it states, he received yearly the sum of 50s. at the Exchequer. We could but picture this in our mind's eye, and fill the chapel with those who worshipped in that past and almost forgotten time; for the entire emptiness of the place, and this chapel is totally bare of every vestige of furniture, but helps the mind to refill it. It has been miserably treated in many ways. The genuine Norman windows are all gone, and wider openings substituted, and the antique, foot-worn floor has disappeared, and new tiles substituted. Much here might be said, for we could but *restore* mentally the original narrow lights, and could but then picture the strange gloom of the place, and bring back in idea the Norman chapel as it was. There can be no manner of doubt that the grandest form which architecture has ever assumed in this England was the Romanesque or Norman; and here, even as things are, it may be seen and become evident enough to those who can and are willing to look for it. At what time, says the guide-book, it was stripped of its ornaments and furniture, and when it ceased to be used for religious purposes, is unknown. Most surely so. It may be mentioned, in passing, that this chapel is strikingly *resonant*. The "chanting" in those ancient days here, by either rough or smooth voices, must have had a singular effect. Do the thick stone walls help this, and how far, and why? A creation of the past, but to be *explained* by the present.

This Tower is indeed full of romance, and we know not how to say enough in a short space about it, for at every turn there is a something, and the wondering gazer can but wish that the spirit of "improvement" would but now and then pause, and let things alone; here especially, for you cannot but wish, though so vainly, for the power to restore this White Tower, and thus to see it as its priestly architect Gundulph, of Rochester, left it, for it is right full of pitiable and cruel mutilations. The largest room in it is in the upper floor, and was, in the time of its pride the great Council Chamber of England's kings when they held their "Court" at the Tower. The guide-book says that this is an almost "unrivalled apartment," and with its massive timber roof, well harmonises with the grand features of other parts of this building. It does so, and more: it takes you, if willing, fairly into the dead past, and you soon people it. Here in this room did the Council assemble when the Lord Protector, Richard of Gloucester, condemned Lord Hastings to instant execution in front of St. Peter's Chapel. A scene only to be pictured. It was certainly at one time acted. This room, so full of memories, together with the Banqueting-room, is now, as we have said, well nigh choked up with "stores" of arms, weapons, and warlike implements arranged in groups and devices, so as to resemble flowers, and so on. It shows how far it is possible to misuse, and put out of sight, a room of the past, and to blot out its historical memories. War stores, let us add, are most injudiciously and needlessly deposited in every part of the White Tower, the "Armory" only excepted. It is but fair to add that so incongruous is all here in this Tower of London, that the very warders of the Tower, in their ancient costumes, and all so full of odd Tower stories, both right and wrong, regret this not a little, and seem to feel how much is lost by it. We would hope that the authorities will take it to heart, and find more appropriate arms "stores."

Thus far the keep, or White Tower, as part of the whole mass of buildings called the Tower of London, surrounded by its moat, filled at one time with water from the silent river that flows by the side of it. We would fain here go on and map out the rest of this Tower idea, but must leave it for another opportunity. It is well worth study. We cannot, however, even now leave this interesting theme without a note on the disappearance of the quaint "street" which once on a time ran completely round the fortress, the south side only excepted. Here there must most certainly have been not a few curious things to look at. Indeed, one can hardly imagine a stranger or more picturesque sight than this long narrow way of quaint houses, with towers on the one side, and with the outer ward and ramparts on the other. A true and real, however inconvenient, Mediæval street this was. It has, *the whole of it*, totally disappeared! but the course it took, and the *plan* of it can be readily traced, and a strong imagination can, in part at least, mentally restore it. Next to London Bridge itself, before the Great Fire of London in 1666, a date to be remembered, it must needs have been the most picturesque thing in all Gothic London, and the one most unlike anything built or imagined nowadays. A little glimpse of it can even now be seen and realised, for entering the Tower at the south-west angle over the bridge crossing the moat—where so much, by the way, has totally vanished by its being empty of water—we pass through the Byward Tower, immediately into the Outer Ward, and in the turn to the left we get a glimpse into the street, and at the little that remains of the quaintly-grouped buildings, with the Bell Tower and the Beauchamp Tower in the distance—you must not go *too* far. A glimpse, we say, and but a glimpse, may yet be got of this place as in the days of its actual existence and utility. It is worth a visit, is this Tower of London, for very many reasons!

STUDYING THE ECONOMIES.

THE lovers of rigorous economy must feel very much gratified to see, now and then, how the "authorities," here and there, endeavour to look after the pennies, leaving the pounds to take care of themselves. To be sure it happens, sometimes, that, during this intense watchfulness, the pounds take flight, and run wildly away in all directions; that is not to the purpose, for, will not "accidents" happen in the best regulated parishes as well as families?—and the ratepayers must make allowance accordingly.

Some one has said that "an ounce of fact is worth a ton of argument"; and, accepting that very old "saw," we happen to have the valuable ounce, if not more, should more be requisite at present. There is a place near Bristol called Long Ashton, and Long Ashton rejoices in a District Highway Board, and this Board revels in the luxury of a surveyor. In the course of events, however, surveyors, like other mundane beings, disappear, and fresh ones must be found to take their places. So it was with the "Long Ashton District Highway Board," and the consequent "Notice is hereby given," made its appearance in due season under the signature of a gentleman whose name is too "multitudinous" to insert here. This highly picturesque district comprises twenty-two parishes, and possesses one hundred and ninety-eight miles of roads. The new surveyor is to be elected on the 22nd inst., and the following are some of his qualifications and duties. He will have to act as the Board's agent, and carry out all orders given to him, conforming himself, also, to the direction of those above him. Of course none but experienced persons need apply, and, as if to double-lock the door, any who are incapable are warned off; the incapacity being measured by an inability to,—"First, of giving an annual estimate of the expenses likely to be incurred during the ensuing year, for maintaining and keeping the highways in each parish, within the district of the Board,

in repair; second, of keeping accurate accounts; third, of letting and measuring work; fourth, or whose age is above fifty." But, we have not got to the end yet. "The person appointed will be required to keep a horse, and reside near to the centre of the district." We suppose that we may take the horse and the "centre of the district" to be the "fifth" and "sixth." Well, for all the qualifications, responsibility, and skilled work of the said surveyor (not omitting the horse and his "keep"), he is to receive the magnificent salary of,—Two hundred pounds sterling per annum! Surely, the most severe economist would never dream of charging the Long Ashton District Highway Board with squandering the money entrusted to them after that declaration. Let us summarise this "warm" bargain. Twenty-two parishes, 198 miles of road, experienced surveyor, horse, and residence in centre of district, and all for the very moderate sum of 200*l.* a year, 50*l.* a quarter; or about the wages of a third-rate collier working in the pit! Now, the keep of a horse involves the keep of a man to look after him, unless, indeed, the Long Ashton District Highway Board intends to add stableman's work to the surveyor's other duties. Well, man and horse, even at Long Ashton, could hardly be "kept" for less than 30*s.* a week, which is 78*l.* a year,—barring bissextile; then the horse would want something to "put on his back" in the shape of harness when at work, and horse-cloth when at home. Harness indicates a "trap" of some sort, a respectable affair would be necessary to reflect dignity on the Board, and that again rolls one into coachmakers' bills, stabling, stable utensils, &c. Shall we say 22*l.* more for all these things, so as to bring the horsey part of the business, down to "even money," as the London bakers have it in their windows? There would then be left 100*l.* a year as the remuneration to the surveyor for looking after the 198 miles of roads scattered over the two-and-twenty parishes! Truly, in the language of the advertisement, "None but experienced persons need apply, *or*," we will not quarrel with the grammar of the Long Ashton District Highway Board, seeing that the commodity is scarce and expensive,—"*or*, any who are incapable" of doing the work of a professionally-educated gentleman on the wages of a house-carpenter. We see that the Board, speaking of the institutional members plurally, are careful,—careful to a degree; they will not even show any extravagance in syntax, but do without it as much as possible whenever they can.

It may, no doubt, interest those gentlemen to hear what one Thomas Telford, a name probably not unknown to them, had to say about roads and road-surveying. In his first annual report on the Holyhead-road, dated May 4th, 1824, he thus speaks:—"Perfect management must be guided by rules and regulations, and these must be carried into effect by the unceasing attention of a judicious and faithful surveyor, who has by actual experience and attention acquired a thorough knowledge of all that is required and applicable to the general and local state of particular districts, as regards soil, materials, and climate, likewise the sort of wear to which the surface is liable. A person possessed of all these requisites, and otherwise properly qualified to level and set out new lines, &c., where necessary, must receive the remuneration such a character merits, and may always obtain, in this active and industrious country." There, magnates of the various district Highway Boards, Long Ashton included, what do you think of that? Surely you will not reply that 200*l.* a year, horse, man, &c., to be kept out of it, is fair pay, according to the above standard; and here we will leave you.

Another phase of studying the economies is afforded by Tipton, of "slasher" renown in muscular annals. Tipton is in Staffordshire, has a population of 30,000 inhabitants, and enjoys the inestimable blessing of a Local Board of Health. This favoured town wants a suite of Public Offices, and the Local Board has, or have advertised for designs for buildings at a cost of 4,500*l.* Well, Tipton is liberal,—at least the Local Board is to Tipton,—as the following ought to show. There are to be three premiated designs, thus:—for the first, or best set of plans, elevation, and specification the sum of *fifteen pounds*; for the second best 10*l.*, and for the third set 5*l.*! But Tipton has not done yet. The Board does not bind itself to accept any of the plans that may be sent in; but should it do so, such premiated plan is to become the property of the Local Board of Tipton. The scale is one-eighth to a foot, and in the event of any of the winners being appointed to carry out the work, the premium he may have received is to be deducted from his commission. Here is a chance for a rising architect, or perhaps for one who is already risen!

Again: the Local Board of Mexborough wants a Market Hall, of the dimensions of 130 ft. by 50 ft. The premium here is 25*l.*, but the whole of the premiated drawings are to become the property of the Board.

Coming a little nearer home, and a step or two downwards, we have every reason to shake hands with ourselves so far as the study of the economies (parish this time) are concerned. The vestry of the parish of Chelsea require the services of a very important officer, that is, if they properly understood his importance, which, from what we see before us, we fear that they do not. They require an inspector of registered lodging-houses, and a dust inspector. His hours of work are to be from eight o'clock in the morning until six o'clock in the afternoon. His "salary, including travelling expenses, will be 78*l.* a year, to be raised 5*l.* a year for three years, and he will be provided annually,"—and here comes our long-cherished, dear, old obstructive Bumbledom to the front,—"he will be provided annually with a livery coat and hat." Then comes a most wise condition, it is as follows:—"The person appointed will be required to square and cube dimensions, to reside in a central part of the parish, and to devote the whole of his time to the duties of his offices." The cubing and squaring ought not to be forgotten. Bonnycastle in livery coat, measuring-tape in hand, is again a sight to behold in the study of the economies.

The neighbouring Board of Works of the Fulham district wants an inspector of nuisances, coupled with the office of inspector under the Adulteration of Food Act. The fortunate individual who may be chosen is to have thirty-five shillings a week, but nothing is said about a livery coat and hat. On account of what is stated about the duties, the person appointed, it is presumed, will have to be acquainted with the "Nuisances Removal Act, the Metropolis Local Management Act of 1855, the various Acts amending or altering the same; such other Acts as may from time to time come into operation within the metropolis," &c. And all this for thirty-five shillings a week—wages!

Seriously speaking, is it any matter of surprise that such studies of the economies should produce in turn a study of how to sham economies? When we see surveyorships offered at prices that would not pay a skilled mechanic, and inspectorships at wages fit only for superannuated policemen, where the intelligence of well-educated gentlemen is required, we need not wonder at what we see,—namely, sham and deceit spreading in every direction.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

The eighth annual general meeting of this Institution was held on Tuesday evening, March 23rd, at the offices of the Society, 27, Farringdon-street,—Mr. George F. Trollope, president, in the chair. There were also present Mr. Charles Fish, Mr. Thomas Stirling, and other friends of the Institution.

From the report it appeared that one new pensioner (Mr. Spencer) had been added to the list during the past year, to which should be added Mr. Eaton, elected on this occasion, making a total of nine pensioners now on the fund.

It was also announced that the sum of 200*l.* had been added to the invested funds during the year, making a total 1,325*l.* so dealt with since the foundation of the Institution in 1866, of which sum 700*l.* stand to the account of the Relief Fund, and 625*l.* to the credit of the Orphan Fund.

Referring to the latter, it may be remembered that proposals were introduced at the meeting last year by Mr. H. T. Bayes for bringing the same into use by purchasing life presentations in some of the excellent orphan homes that now surround London, and which could always be maintained by the insurance of the presenter's life, and the majority of [that meeting having voted in favour of the proposal, the details were submitted to the present meeting for approval.

A discussion ensued as to whether the rules as at present framed would admit of the money being utilised until it reached 1,000*l.*, and eventually it was arranged that the matter should stand over for three months to allow of time being given for properly advertising the special rules proposed, and making such amendments in the existing rules as might be deemed essential for the proper working of the fund.

Votes of thanks were presented to the retiring president, Mr. Charles Fish, and to Mr. Patterson, the hon. solicitor, for services rendered by them to the Institution.

The proceedings were brought to a close by a unanimous vote of thanks to the chairman.

NEW VESTRY HALL AND OFFICES AT HAMPSTEAD.

The Hampstead Vestry have resolved to erect a new vestry-hall and public offices. At their meeting last week the Works Committee reported on the subject. The report stated that various sites had been submitted to them, and they recommended the adoption of that at the south-east corner of Belsize-avenue, which was freehold, and the cost 2,800*l.* The adoption of the Committee's report having been moved by Mr. Le Breton, Mr. Harvey moved as an amendment that the vestry clerk be instructed to offer 1,700*l.* for a large site at Hampstead-hill-gardens. This amendment was lost, after which it was moved that the consideration of the sites be left to a committee of the whole Board, but this also was lost, and the Committee's recommendation in favour of the Belsize-avenue was adopted. It was also resolved that the vestry clerk be instructed to negotiate for its purchase.

THE LATE MR. F. PECK, ARCHITECT.

An advertisement in our journal, last week, announced the death of Mr. Frederick Peck, architect, who has been taken away at the early age of forty-seven. He was a native of Cambridge, and designed the Albert Asylum and the enlargement of the Guildhall, for the designs for which the first premium was awarded him after a public competition. Mr. Peck was known as a rising architect, and his successful completion, on a novel plan, of the Agricultural Hall, at Islington, brought him prominently into public notice.

Amongst other works of his, mostly gained in competition, may be named, the Albert Middle-class Colleges at Framlingham, Bedford, and Trent; the Maldon Workhouse; the Whittlesea Workhouse; the Lincoln Gaol; The Works Hall, Leiston; the Bedington Orphanage; besides several churches and other public works. He had also built numerous private houses, &c., amongst which Sir Robert Harvey's house, at Crown Point, Norwich, may be mentioned.

It would be well if all could give as good an account of the employment of forty-seven years as the late Mr. F. Peck. It seems that epilepsy, consequent upon over-work and a most anxious, excitable temperament, was the cause of decease. He had been a great invalid for three years, for the last twelve months being quite incapacitated from exertion, and his various works have been carried out by his friend and partner, Mr. H. E. Coe. Mr. Peck was an associate of the Institution of Civil Engineers.

THE IMPROVEMENTS IN ROYAL MINT STREET AND THE ERECTION OF ARTISANS' DWELLINGS.

At the meeting of the Whitechapel Board of Works last week, a deputation of ratepayers resident in Royal Mint-street waited upon the Board with reference to the disposition of vacant surplus land in Royal Mint-street, and presented a memorial requesting the Board to dispose of the land only for the purpose of erecting artisans' dwellings. Mr. Straw spoke on behalf of the deputation, and said the inhabitants of the neighbourhood had heard with alarm that the Board was about to let the land in question without any restriction as to the nature of the buildings to be placed thereon. If that were carried out, the result would be injurious to the district; for in making the improvements a large number of dwellings were removed, and a loss followed to the tradesmen of the district. The site was eminently suitable for the erection of artisans' dwellings, and the deputation hoped the Board, in disposing of the land, would secure

their being built. The deputation having retired, the clerk presented a report from the special committee recommending the acceptance of an offer for the land, and at the same time the clerk explained that a railway company wished to purchase the land, and whether any other course was adopted in relation to the property they would endeavour to acquire it by statutory power, in a Bill which they were about to introduce into Parliament. After a long discussion on the subject, it was resolved to hold a special meeting with the view of rescinding a resolution respecting the land passed at a previous meeting, and disposing of it for the purpose of having artisans' dwellings built upon it.

THE PROPOSED DESTRUCTION OF PEMBROKE COLLEGE.

THE memorial we printed has had no effect. The Master of Pembroke says there is no alternative but entire demolition, and adds,—"Orders accordingly have been given for the immediate removal of the old buildings with the view of erecting a new hall on the same site."

Mr. Waterhouse backs up the Master, and seeks to comfort the objectors by saying,—"it is intended, in rebuilding the hall on its old site (but on a somewhat extended area, to meet the wants of the college), to adhere strictly to the style of the fourteenth century, the date of the original structure"; in other words, "We can't leave you the original, but you shall have a very good copy."

The memorialists are far from satisfied, and call upon the authorities to take the opinion of Sir Gilbert Scott, or some other architect accustomed to the restoration of old buildings, as to whether the destruction of the oldest collegiate building in Cambridge is absolutely forced upon them, or if with judicious repair it cannot be preserved in its pristine form.

Mr. John A. Cory, architect, who restored the hall in 1864, cannot agree with Mr. Waterhouse, and cannot but think that means might be found to make the building secure.

But discussion seems of no avail, for the work of demolition is in progress!

THE SUPPLY OF WATER TO THE KINGDOM.

THE Council of the Social Sanitary Association have resolved on the presentation of the following memorial to the Local Government Board:—

"That your memorialists urge upon the serious attention of the Government, the expediency of appointing a Royal Commission to inquire into the subject of the scarcity of pure water in England and Wales, and to make a complete investigation into all the circumstances affecting the present sources and distribution, the localities that possess superabundance and those that suffer from scarcity, and the means by which a more perfect distribution may be effected.

That at the present moment certain communities exist which possess the advantage of having a large supply of water, while there are other communities which are obliged to undergo the inconvenience and hardship of a small supply; and there are numberless villages, also, where no public water supply exists, and where the inhabitants in times of drought are obliged to use polluted water for domestic purposes, much to their detriment.

That for sanitary and other purposes in many towns and villages, an increased supply of pure water is urgently necessary for the preservation of health and prevention of disease; and that to the want of a sufficient quantity of good water, together with the increased pollution of existing sources of supply, are due many of the ailments and no small proportion of the present mortality of the people.

That the object of the Commission should be to ascertain the extent and character of districts suffering from an absence of supply or an insufficient quantity of water; to investigate the capability of raising water from subterranean sources, or of collecting rain-water on the surface before it is absorbed; the capability of storing water in rivers, and to maintain a more equal flow; the supply of water to villages and small towns where no public supply, nor sufficient private supply, exists; the encroachment of one watershed upon another; the mode of constructing reservoirs and tanks, and the purification of water generally.

That in furtherance of this object the Council recommend the appointment of a Royal Commission, as suggested, to inquire into the whole subject of water supply in England and Wales."

We warmly concur in this recommendation.

Opening of Hawkshead Church.—Hawkshead Church, which lies between Windermere and Coniston, was opened last week, when the Bishop of Carlisle preached. The restoration has been conducted under the superintendence of Messrs. Cory & Ferguson, architects. The fittings throughout the church are of oak.

ACCIDENTS THAT CONCERN US.

LAST week the extensive furniture manufactory in Turner-street, Shieldfield, Newcastle, belonging to Mr. Vittorio Mastaglio, was totally destroyed by fire. The workshops being stored with inflammable material, the flames quickly obtained such a hold over the whole manufactory as to utterly preclude the possibility of any portion of it being saved.

The Rev. Dr. Monsell, Rector of St. Nicholas, Guildford, and one of her Majesty's chaplains, met with a serious accident on the 25th ult. The rev. gentleman was standing on a large stone, inspecting the progress of a new church which is being built for him. The stone, a large boulder, moved, and he fell, dislocating his shoulder, and fracturing his left arm.

At Sheffield, on the 24th ult., an alarming accident occurred on the premises of Messrs. Marsden & Stoker, iron and steel merchants, Sheffield Park. The front part of a warehouse, used for storing large quantities of iron, fell with a terrific crash into the road, and blocked it. Several persons who were passing escaped almost miraculously from injury. One side of the storehouse lies parallel with the park, cutting off the Midland Railway.

Mr. Skinner's cabinet-maker's shop and warehouse, at Middlesbrough, has been damaged by fire to the extent of 10,000*l*.

THE YORKSHIRE EXHIBITION AT LEEDS.

THE alterations necessary to be effected at the Coloured Cloth Hall, in order to prepare it for the exhibition of arts and manufactures, to be opened in Leeds early in May, are being rapidly pushed forward. The great central hall, covering two-thirds of the spacious quadrangle, has already been upreared and roofed in, and the various streets, as they are called, of the Cloth Hall, which have been placed at the disposal of the Executive Committee by the trustees and standholders, are in an advanced state of preparation. One-third of the yard has been retained for market purposes, and through this the sightseers will have to pass before reaching the exhibition, grimy brick walls and unsightly offices meeting the eye instead of a blaze of light and colour. After passing through the turnstiles, however, the visitor will be ushered into the grand central hall, covering two-thirds of the yard, and subdivided into nave and aisles. This structure, which is composed entirely of wood and glass, is well designed; and the interior, besides being lofty and capacious, promises when decorated to be charmingly bright and elegant. The nave is one span of 60 ft., and the arched ribs, constructed on Captain Fowkes's principles, and surmounted by a lantern roof, combined with the great height, nearly 100 ft., lend an airiness and grace to the whole. The nave and aisles are 187 ft. long, and the height from the floor to the ridge is 70 ft. It is computed that this hall will seat six thousand people. The works are being carried out from the designs and under the superintendence of Mr. Bakewell, architect, Leeds. Messrs. Whiteley & Co. are the contractors for the grand hall; and Messrs. Boothman & Broomhead for the machinery annexe. Mr. J. L. Brown is clerk of the works.

SCHOOL BOARD SCHOOLS.

London.—Sir Charles Reed, chairman of the London School Board, opened the new buildings just off the Borough-road, Southwark, on Tuesday, the 23rd ult. In the division of Southwark, he said, there were 9,879 children who needed to be in efficient schools. Towards that number there were 3,948 in existing schools, which left the Board to provide for 5,900 children. The Board had agreed at first to provide for about 3,000 children in this division, and this building would accommodate 1,073 children, but still it left a deficiency to be provided for to the extent of 2,200 school places. The site covered 7,500 square feet. There was a playground, which was an important element in the education of children. The site cost 4,800*l*., and the school 7,000*l*. Mr. Robson was the architect, and the builders were Messrs. Kirk & Randall. The School Board had at the present moment opened about 77 schools. In the Industrial School Department of the Board, 3,395 children had been dealt with by their visitors, and out of that number they had taken 1,757 into industrial homes on board ship, or put them under good influences.

Norton (Derbyshire).—A Board School, which will accommodate about 700 children, has been opened in this village. The site of the new building adjoins Derbyshire-lane, and has been erected at a cost of about 2,700*l*. The premises consist of two large rooms and two classrooms. The largest room, which will hold about 400 scholars, is to be used for boys, and the other large room, which is adapted for 300, will be devoted to the girls. The class-rooms can be made to hold about 50 children each.

Wiltshire.—New schools are about to be erected at Donhead St. Mary, at a cost of 1,884*l*. 5*s*. It is expected they will be ready for opening early in October next.

FEVER DENS IN BERMONDSEY.

AT last week's meeting of the Bermondsey Vestry, the medical officer reported that three children had died of diphtheria in a house, the sanitary condition of which was such that disease was unavoidable. The basement was damp, and the walls dirty and dilapidated. The house, and five others adjoining, were falling to decay, and were become totally unfit for human habitation. They required to be dealt with under the provisions of the Artisans' and Labourers' Dwellings Act, and he certified accordingly. Mr. Porter, a member of the Board, said that the owner of these houses had been to him, and stated that their condition was owing to the filthy habits of the people; but the medical officer said they were not only dirty, but damp, dilapidated, and not fit to live in. Disease to the occupants was inevitable. The surveyor was ordered to report upon the matter, with the view of the owner being summoned before the vestry.

WARWICK CASTLE.

THE restorations here rendered necessary by the fire which occurred there about three years ago, are approaching completion. The *Standard*, after giving some particulars of the works done, says:—

"The inner court is yet encumbered by the temporary office of Mr. Bromwich, of Rugby, the contractor. It is kept pending a decision as to the future home of the valuable Shakspearian library preserved in the castle. Between the machicolated gateway and Cæsar's tower are several offices which have been used for domestic purposes since their erection. A suggestion has been made that this building, erected, it is believed, by Fulke Greville in Shakspeare's lifetime, would be an appropriate resting-place for his works. Whether this idea will be carried out is not yet known, but if the temporary structure was removed the last outside vestige of the fire would disappear, and the spot which has been interwoven with English history from Alfred the Great to Victoria would be again the baronial mansion and Mediæval castle which our fathers knew, and be prized as of yore as the diadem of the Midland shires. The outer walls yet bear the hooks from which the woolsacks were hung by Lord Brooke to guard his gateway against the cannon of Lord Northampton and his cavaliers. The flagstaff is yet on Guy's tower as of yore, when Peto, the governor, displayed his Bible and winding-sheet as a sign of faith and defiance. The stables from which the Gunpowder Plot conspirators stole their horses are destroyed, but at the present stables the old armourer may be seen at his task, a fitting link between the past and the present."

The Water Supply of London.—A Bill bearing the names of Colonel Beresford, Sir Charles Russell, Mr. Forsyth, and Mr. Ritchie, which has just been issued, has for its object the "making more effectual provision for a constant supply of water and for the protection of life and property against fire in the metropolis." It proposes to transfer the several undertakings of the eight companies now supplying water to the metropolis to a public commission to be constituted by an Order in Council, and entitled the Metropolitan Water Commission, and which shall have power to combine, as far as physical conditions admit, the sources of supply and works of the several companies. The shareholders of the existing companies are to receive perpetual annuities in consideration for the transfer of their shares.

THE DEVELOPMENT OF STONEWARE AND OTHER FICTILE MATERIAL FOR ARCHITECTURAL PURPOSES.

ARCHITECTURAL ASSOCIATION.

An ordinary general meeting of the members was held on Friday evening, the 19th ult., under the presidency of Mr. Birch, when Messrs. Francis E. Cameron and H. W. Peek were elected members.

A vote of thanks was passed to Messrs. Cassell, Petter, & Galpin, for allowing the members to inspect their new premises in Fetter-lane, on the occasion of the last Saturday afternoon visit.

Mr. John Sparkes then read a paper on "The Development of Stoneware and other Fictile Materials for Architectural Purposes." He commenced by saying that the use of terra cotta, in its various forms of moulded brick, and that of glazed earthenware in Classical and Mediæval times, had been so often alluded to that he could not feel it a part of his duty to enter at length on that subject, especially as the material he had to introduce to their notice was none of these, but an absolutely new application of a very old ware. He had but to recall the use of such materials in Greece, and the colonies of Greece on the mainland in Classic times, shown by the superabundence of remains found whenever an excavation was made. The architects of the Classic period loved to decorate their skylines with points of interest, which the plastic nature of their material enabled them to do whenever an antefix came under their hands. In the Middle Ages this tradition came to them, and received a new development, when in the thirteenth century, different methods of decoration were revived—probably much earlier; but the soft nature of the material, the imperfect burning, or the decay of the wood, or the exposure to the influence of the weather, all these had acted to abolish traces of such remains. However, in the drawings of buildings in the west of the town, no doubt they perceived such objects in their ordinary combination, with tile roofs or shingle roofs all serving as backgrounds to their subjects. Many such existed to this day in mid-France, notably at Troyes, Bourges, &c. In these examples ordinary brick earth was built up in architectural form for the finials, coarsely put together, apparently modelled, each as it was wanted, *not moulded*. Consequently, in great variety of design, and with an expression of originality not common in modern terra cotta. The earth when burnt was glazed with lead glaze, with any simple colour in it or under it, such as red, brown, yellow, and green. In the sixteenth century, these simple terminations gave way to a finer system of modelling, and various coloured enamels were used to replace the rougher forms and tints of previous designers. They were and are still called Palissy ware, and had consequently been collected, and in most parts, removed from their original situations. These pieces were enamelled, and a large range of colour was obtainable. Not only in France, but also in Germany such traditional decoration was never lost, and in many a South German village of the present day such things might still be observed. The more general and nobler use of these materials was manifest in those countries on the level plain of Central and Northern Germany, and in the architectural treasures of this district the architect and the archæologist had a vast series of interesting lessons in the use of burnt clay, in its full variety of forms, as tracery, and as a system of moulding decoration for openings, he knew nothing in Lombardy more instructive than the gates of Lübeck, the gates of the church of New Brandenburg, and some examples of similar uses in Dantzig. In Holland, Amsterdam, Utrecht, and in other towns, they give less instructive though not less clear evidence of the powers of this material in the hands of the designer, who could grasp its peculiarities, and conform his ideas to its technical limitations. While speaking of the general subject, he might allude to the material as perhaps the only one that would adapt itself to the endless designs that thousands of artists had given to the world for chimneys and chimney-pots. The variety in Germany and North Italy alone was bewildering; and, in their own country, all, whether artists or not, must be struck with the many characters that the Elizabethan designers gave to the roofs and the skylines by the splendid decoration of the chimneys of their houses, these often being brick, even when the building was of stone. The durability of these pattern decorations must be estimated from the fact that they actually existed at this day. For instance, there were Elizabethan chimneys in Sussex at this hour as sharp as when they were erected. A hot climate did not affect the material; and the gates at Lübeck, and the roofs and pinnacles at Breslau, showed that glazed ware was quite capable of withstanding the severe trials of the hardest frosts for hundreds of years. And the existence of Roman and Greek terra-cotta,—some of a peculiarly frail kind of clay, such as the Etruscan vases,—all pointed to the practical indestructibility of this substance. The remarkable Etrurian monument, recently added to the British Museum collection, by Signor Castellani, proved the indifference of these baked earths to the effects of time. Two thousand years had had no deteriorating effect on this strange work of an almost unknown people. The protection that was afforded by a drip mould was sufficient to secure the bright lead glaze of the ordinary glazed bricks used in Pomerania from deterioration. Climate of the most changeful and rigorous kind, equally with the no less destructive sea winds of their western coast, had the least possible effect on well-burnt pottery, whether glazed or not. The enduring quality of terra-cotta was due to the nature of the clay used in its manufacture, and the amount of heat to which it had been exposed; and this was the difference between honestly-made terra cotta and the material that had often been used, which was too imperfectly fired to resist the ordinary exposures to atmospheric effects. In general, all the cases of durable terra cotta and glazed earthenware mentioned were soft in body, and, in every case, when glazed, were either simply dipped in a lead glaze, or, where enamelled, in a tin opaque glaze, which was afterwards coloured. This protected the soft and more or less porous body from direct action of external agencies; but was in itself not proof against them, and they might conclude that the atmospheric action on all these metallic coatings was sooner or later destructive; so that, finally, the body of the fictile material was the substance on which all reliance must be placed. Thus, the condition of the body was the ultimate consideration in dealing with any of these things. He would seriously ask the attention of all architects to this question, for it was one which had by its neglect served to bring terra cotta and similar pattern materials into disrepute. The point, therefore, to be insisted on was, that the clay was of a proper kind, and the firing was sufficiently long continued and intense to cause the chemical change which converted the friable earth into an everlasting piece of pottery to be perfectly achieved. Both of these points were of importance, for, on the one hand, if an ordinary stock brick were burned in a pottery kiln it turned to a bubble of cinders; other clays, which were perfectly capable of resisting the intense heat, were not close enough in texture to make a tough resisting building-material; thence the proper knowledge of pottery came in here, and, in such a question, it virtually became a matter of honesty and capability in the potter who was employed to produce these things. Again, on the other hand, the amount of firing each piece required was a matter necessarily left to the potter; but the purchaser had his tests, which could be easily applied, such as "ringing" the ware, and the further test of scratching the ware sharply with a steel point or knife, which, if resisted successfully, would prove the burning to have been honestly done. Nevertheless, in spite of many instances of soft terra cotta, the fact remained that burnt clay, in many of its forms, was by far the most durable of all building materials commonly available. The new adaptations in glazed terra cotta he had to introduce were those which had for the most part an effect dependent on the beauty of the ware itself. Not anything was added to the body to develop those golden tones, and those tones that resembled old gilding, and that, judiciously used, would serve as the most gorgeous background of an imperishable material ever brought into practical use. The specimens then before them had passed through the large kilns, and had attained a partial vitrification of body, and were covered with a purely vitreous glaze, so hard as to cause them to rank with porcelain as to their durability. He indicated these few specimens to architects when they had to deal with the finishing and decorating of large wall-surfaces. He now came to a material which had separate claims to the attention of the architects of this country, on the ground of its absolute indestructibility, and its absolute novelty, as well as on the score of its great beauty. Stoneware had been known as a pottery material for many centuries, but only came to its full artistic development in Germany in the fifteenth to the seventeenth centuries. It was a dense and highly-vitrified material, impervious to the action of acid, and of peculiar strength, and differed from all other kinds of glazed earthenware in this important respect, that the glazing was the actual material itself fused together. The whole process of pottery in this ware was peculiar, and its peculiarity was the essential characteristic of stoneware. The difference between it and other ware was this,—that the firing and glazing were one operation. This subtile aërial glazing was thin, transparent, and intensely hard, and almost indestructible. It did not coat the finest scratch so thickly as to obliterate it. It was on this account the perfection of glaze. It was a great security against imperfect burning, as the salt used in connexion with it would not volatilise at a lower temperature than sufficed to make the ware white-hot. Such was salt-glaze stoneware, a material so indestructible, that it was the only ware that effectually resisted the attacks of the strongest acids, and that consequently was used under the general name of chemical ware for the manufacture and storage of these substances. The demand for these chemical vessels was enormous; they were exported to Russia, Germany, and wherever a chemical manufactory was established. The methods of decorating this material were strictly limited by the conditions of its manufacture. Naturally, stoneware, as burnt with coal in Lambeth, had a rich light or dark ochreous brown tint. This might be prepared for colouring by various methods of scratching or cutting out of patterns when the clay was wet, or where "green hard," and various additions might be made to its plain surface by various ornamental forms, or by partially carving, or by piercing, and even by modelling. These various results of treating the surface were then coloured, and the whole fired. It was necessary to call their attention to the range of colour that could be attempted, as upon this question the whole decision respecting its employment must sometimes hang. In the *Old Gris de Flandres* the range of colour was very beautiful, being blue or grey, and purple or purple-brown. The harmony that these two colours made with the body of the grey ware was the source of the pleasure they had in the old pots that were so eagerly collected. With the modern Doulton ware this range of colour had been considerably increased, as by the application of a white slip the old *gris* might be imitated in parts of the ware; this added white or grey to the ochreous body of the stoneware. The old grey and the modern grey, it must be remembered, were burnt with wood, and thus the necessary employment of coal brought them face to face with many difficulties that were never met by the old potters, and the more intense heat produced by coal over wood caused other troubles connected with the body of the ware. The use of larger kilns, and the consequent production of a larger mass of heated ware, which had to be cooled very gradually, brought its own trouble, on the ground that certain colours would stand the intense heat, but not the long-enduring jasper ware colour. Nevertheless, these disadvantages have, in some cases, a corresponding compensation in the partial destruction of the pigments by heat, which produced a most beautiful variety of ware colour. Again, the chemical conditions brought about by the firing of large masses of ware in the open kiln, in close contact with all the vapours of coal in combustion, were very adverse to success in the efforts to introduce certain colours, and the sulphur and other products interfered obviously with the intended results. It was interesting to observe that the efforts made at Lambeth during the last four years had stirred up the German potteries to make a reproduction of their old national ware, and they saw now, even here, abundant proof of this revived activity; but the spirit of the thing was wanting, and at present they had not attempted anything further than the beer-jugs and heraldic flat bottles that were so fashionable at the time of the Reformation. So that neither now, nor at any other time, had this material been used for architectural purposes. It came, therefore, as an absolute'y new application, which it was for the architects of to-day to develop. This, he felt sure, might be done with great gain to the beauty of small parts of their buildings, for the Doulton ware had a property and a quality that no other ware possessed. He

would call their attention to the soft rich brilliancy of the tones. Such a material, if used to touch up a building, must be a valuable addition to an architect's resources. With such colours, applicable as they were to every variety of plastic forms,—sober, quiet, harmonious, and deep, full of quality, and without any possibility of their ever becoming, even in the hands of inexperienced designers, garish or common,—almost any conceivable effect might be produced. And he had to point out that this decoration might and generally was found to still further enrich a building as the fabric obtained age. The disadvantage that attached to the use of bright glazed pottery-ware decorations often was, that they were brilliant and fine, and in harmony with a perfectly new building undimmed by the weather stains and smoke of towns, which, in a few years, would certainly reduce the whitest and brightest moulding to a more or less dingy tone. This objection was met by the employment of this low-toned yet perfectly jewel-like system of decoration. The very virtues of this stoneware, which were the result of its greater trials, made it of different application to terra cotta, as by the greater closeness of texture, and the greater heat that must be employed to vitrify it, a greater risk of warping and cracking was inevitable. This at once indicated its use in small pieces, and in such places where absolute flatness of surface was indispensable; but, under these conditions, he conceived it might be applied, with most admirable effect, to heighten mouldings in red terra cotta, or to panel terra-cotta pilasters that might be either dry or glazed; to introduce it as surface decoration in the manner of tiles, but with a perfectly different quality of effect, as bases and capitals, particularly as shafts to ornamental columns, as bosses to vaults, or as smaller bosses or roses for the heightening of mouldings of all work that was ornamental and visible from a near point of view; for larger work at a greater distance also, but then, of course, the scale and system of the decoration must be adapted to its position. It was clear that the disadvantage that attached to the use of polished marble for shafts or decorative bosses was completely overcome by the unalterable nature of the new material, and the certainty that it would retain its brilliant surface for centuries without any exfoliation or weathering, which too often left the most delicate compositions without a point of interest, except a regret at its premature decay. The ordinary earthenware and majolica bosses were different from those that he now spoke of, in the fact that their glaze was always liable to "craze," and, in the majority of cases, was already crazed, as many specimens he had seen showed. The effect of "craze" was to admit atmosphere and weather influence to the body of the ware *under the glaze*; that meant to disintegrate it in time, if the body was not sufficiently vitreous to resist the attack, which, in the case of stoneware, was assured. The question of strength of this material was not likely to be a vital one, as it was not probable that it would be used in a constructive form, except under certain limitations, but rather as a method of applying surface decoration. Nevertheless, on this score, it was satisfactory to know that water-pipes were made of a clay not so strong in its nature as that used for these vessels, and burned and glazed in exactly the same manner that were subjected to working pressure of 30 lb. to the inch, while the crushing force was from 50 tons to 100 tons per foot of surface dependent on the form and construction of the piece operated upon. Generally speaking, the tables of strength, based on the behaviour of terra cotta, might be regarded as showing the minimum of the resisting power of this new ware. With regard to cost, terra cotta, generally, was a third less than stone for ordinary mouldings, and the usual application of decorative features, but this ratio was materially altered when a design, with much under-cutting, was necessary. Then the facility with which this was done in soft clay caused the relative cost of the two substances to alter in the ratio of half to one-third the cost of stone. With regard to the cost of stoneware decoration, experience in its use was wanting on a sufficiently large scale to have brought it into the market as a material which could be supplied at so much per foot; but the cost, whether of simple patterns or enrichments, would at no time, nor in any combination of colours, be so great as to be any bar to its exclusive use. Thus he had endeavoured to give them an idea of what had been done at Lambeth to develop the new material. It remained for the profession to determine the place it should take in future designs. His impression was, that this art, so entirely in its infancy, would take a prominent place in the designs of the future.

Mr. Birch thought that Mr. Sparkes had treated the subject in a more practical manner than was expected. Mr. Sparkes had spoken of the art he referred to as being in its infancy; but Mr. Birch considered that there were traces of tiles found in Nineveh, and also on one of the old temples of Thebes. References to the art were also to be found in the works of Herodotus and Homer, which proved its antiquity. The subject, however, was one which was especially interesting to them, for there were several present who had used these tiles in architecture, and he trusted they would give the meeting information on the subject.

Mr. Crace thought Mr. Sparkes had brought a material there which, to his mind, was the future "hope" of the London architects. From its sober colour and its extraordinary durability, it was a material unquestionably the most permanent of all decoration. He believed young architects ought to bear it in mind as one of their leading decorative materials. He would like to ask Mr. Sparkes whether the form referred to would retain its exactitude after being baked, as those who had used terra cotta had usually found that one of the disadvantages of that material for friezes, cornices, &c., was the broken line which resulted from the baking. Instead of there being a continued series of parallel lines, there was a series of slight hollows observable in any continuous length. With regard to balustrades, he contended that it would be very inconvenient if they were irregular. These difficulties he considered very prejudicial to the use of a material by the builder. With regard to the question of colour, he thought that the material offered magnificent advantages. He was sure that there were a great many ways in which this ware might be used for exterior decoration with great advantage. There was another important point which militated against its further encouragement, viz., its costliness. On inquiring the price of this kind of pottery in the retail shops, they were surprised at the high price charged for small jugs, and when they contrasted this ware in point of price with the Flemish wares, the difference was very great. This might be owing to the fact that Mr. Doulton had confined his attention to more minute or more elaborate designs than might be thought desirable in the future; but for architectural purpose Mr. Crace considered that designs which involved a great deal of repetition were essential and necessary, and he thought that in that case a great difference in price would take place. He would like to know whether, when a design was executed on a large scale, the cost would be less. In a building there were so many costs that the expense of adding any ornamental frieze or cornice would be first struck off by the owner; but an architect would very often adopt them if the cost were less.

Mr. Spiers said that he was responsible for the question of history having been left out of the paper, for Mr. Sparkes's object was to bring a material before them which was new, in order that they might consider its advantages and ascertain how far it could be used in architecture. Mr. Crace had mentioned the fact that in Germany and Flanders it was possible to obtain pots similar to the ware referred to by Mr. Sparkes at less cost; but he (Mr. Spiers) thought those pots were very different; they were executed by a different class of people from those in England. He hoped, however, this would be altered when schools of art were largely established. He had seen people in Flanders with a common reed working out the most beautiful forms; they were more artistic than the English. He believed it was only a question of time for this ware to be used, when he was sure some means would be found of making the cost cheaper. What they had to consider was, how far this ware could be applied to external and internal decoration? One of the disadvantages was, that it retained its glazed surface for a longer time than the rest of the building. Mr. Spiers referred to the fountain which was erected by the late Mr. Buxton, in order to prove the contrast of colour and stone work, and thought that the Albert Memorial would have to be toned down in order to bring it more in accordance with its surroundings. As a collector of pots, he took great interest in the number of specimens of pottery that had been exhibited, and he believed that in the last four years there had been a greater number of designs produced by this ware than had been produced since the beginning of the world.

Mr. Doulton said there was no idea of applying this ware for architectural purposes until recently; but it struck him that as such beautiful effects were produced, they might introduce the ware into architecture. With regard to its durability, there was no question whatever, for strong muriatic acid had been applied to it, by which they got the same effect as they would have had by several centuries of exposure to the weather, and its appearance was scarcely altered. With regard to the variety of specimens of this material, when this ware was first introduced it was supposed that the variety would soon cease: they did not expect such an exuberant production; but week after week these designs had been produced, and no two of them had been exactly alike, for each would receive different external decoration. Referring to the cost, Mr. Doulton stated that when they were encouraged by some practical use of the ware, they would then see what the cost would be. He was sure that if architects were to use it they would not have much to complain of on that score.

Mr. Payne said that it seemed to him that there would soon be very great development in fictile materials; but thought it would have to be in repetition of the same design in order to decrease the expense, and if that were done, he considered that it would be adopted very quickly.

Mr. Sparkes, in replying, said that when he came amongst practical men, he expected some practical remarks, but this had not been the case. Mr. Crace had mentioned two difficulties, the first was the difficulty of obtaining true lines, and the other difficulty was the cost. With reference to the warping of terra cotta and stoneware, there were two kinds of inaccuracies: the first was, when the ware was being dried before it was fired. In this case it was subjected to the greatest eccentricities, and the other was in the kiln. The first of these difficulties could be obviated by care, and the other by being dried. Pieces of terra cotta had been produced at Lambeth, and which were in actual use, more than 4 ft. long.; and slabs had also been produced to form the top of a mantelpiece more than 3 ft. long, which had quite true lines. This proved that it was simply a question of careful drying. With regard to the cost, Mr. Doulton had partly answered that question; but Mr. Sparkes thought that the cost of an article for building purposes could not be obtained at a West-end shop, as that simply represented the accumulative profits. The ware was, in his opinion, very much cheaper than polished granite or polished stone; but he was glad the work was rather costly, because they were able to get more intelligent people in the Lambeth school to work willingly. This ware was beautiful at any time; it could withstand the attack of time. With regard to its costliness, its use, he believed, would make it cheaper. Of course, in architecture, mechanical appliances could be used; but his argument was that it was interesting for the human mind to dwell upon these designs; and he did not believe that the mechanical productions of this ware could do art any service. In conclusion he hoped that the rising architects would make use of this ware.

HINTS AS TO SEWERS AND DRAINS.

ARCHITECTURAL ASSOCIATION OF IRELAND.

AT a meeting, on March 25th, a paper, on the subject of "Sewerage and Sewers," was read by Mr. G. C. Henderson:—Sewerage and sewers are, he said, the subject I find myself nominated to treat upon this evening. Circumstances beyond control have prevented my going into the matter in the manner I had intended, therefore please excuse shortcomings; and as the material part of our subject is an unpleasant thing even to think of, and one that only chemical science can treat in a proper manner, and as I do not pretend to a knowledge of chemistry, I shall confine myself to the means by which we can bring our sewage through our sewers in the least unpleasant manner to the inhabitants of our houses; and if any of my hearers have read the lecture delivered by me some time ago at the Royal Dublin Society, I can only warn them that I am about to go over a good deal of the same ground.

We will first deal with the internal plumbers' sewers, or house soil-pipe, which should always stand in a vertical position. The bore or diameter of these pipes should not, in my

opinion, be too large, as our first endeavour, especially in cities, should be to avoid all deposits, and have the pipes thoroughly cleansed with a minimum quantity of water. A 4-in. pipe therefore seems to me sufficient for any ordinary position. The utmost flush that I have ever seen in a water-closet was supplied by a 1½-in. pipe, and therefore, supposing that two apparatus on the same level were used at the same time, certainly the charges in the pans would momentarily fill the waste-pipe, but would be succeeded by the discharge from, say, two 1½-in. pipes; so much of the soil-pipe being unoccupied as would equal a crust or deposit of better than ¼-in. thick round the same before ever such a flush could operate with full power; however, as neither flush nor deposit will act with mathematical precision, it is no harm to give them both a little play. I cannot pass on without hoping that some improvement in the material used in such pipes will be introduced. I look upon lead as soft,—liable to injury in every way; still, it is almost the only substance we can use in a continuous form. In glazed fire-clay the joints are bad and much too numerous, and the cost of copper is excessive; let us therefore hope that the bituminous tube will, after a due trial, be found to supply the want.

In the matter of traps and W.C. apparatus there are persons who will assure you that certain patent valve-closets, by containing the charge in the pan, will need no further trapping. To this I entirely dissent: so long as you hold up the handle you must have a direct escape of gas, which will ever be present in the best soil-pipe; in all cases a second trap should be used, and I look upon the S or syphon form as best. The outer, or metal pan, of the apparatus should also be as small as possible, and it would be a great improvement if these were enamelled inside, as, doubtless, bad air is generated even in this space, and must inevitably escape through the ordinary putty bedding of the delph pan. Another weak point I have to notice is the connexion of the apparatus with the trap, as it is usually a putty joint, with the apparatus screwed to the floor; and here I see no reason why a screw coupling could not be used and fitted complete before the work leaves the plumber's shop.

We must now follow our soil-pipe, seeing that the joints at the bends, &c., will be soldered, and not merely slipped into one another and closed with white lead, which is sure to crack with the heat of summer; and having thus far examined the work and seen that the lead pipe is brought to the outside of the walls, we will at once connect with a stoneware syphon trap.

Flush No. 1 pan W.C., air escapes from the outer end of the syphon, and the soil becomes lodged in the bottom of the same; this soil gives off a gas that ascends through the soil-pipe into the house. Flush No. 2 forces the soil, and the water entering forces the foul air into the house. This can be avoided by using the ventilation pipes, now so well known, which should be taken from the top of the traps to the highest point of the house. Some say a ¾-in. pipe will suffice, but I think a good rule is to make your ventilator equal to the largest flush; for instance, where two W.C.s are used over one another, it is only necessary to ventilate the upper one. So much for W.C.s: I hold that all other conveniences require the same care in trapping where they discharge into the soil-pipe, and I will only ask a moderate supply of water and ordinary intelligence to keep away all smell.

Outside the house we come to the builders' sewers, and for these I need hardly say that glazed pipes are the best known material; but here, again, is there any reason why half the ordinary number of joints would not suffice? However, we had better use Jennings's patent, or else half-faucetted pipes, cement the lower half circle and puddle the upper portion, while we lay the sewer with a fall of at least 1½ in. to 10 ft.

The use of large-sized sewer-pipes is a great mistake. People say because a building is large it requires large sewers. You will at once see the fallacy of this argument when you consider that the sewage does not lodge in the pipes, but only passes through them, and the smaller the pipe the better the flush. So, therefore, it is the size of the cesspool that should be made proportionate to the number of the inmates, and not the bore of the drains, and for ordinary establishments a 9-in. main drain with 6-in. branches will be found sufficient.

The President, in offering a vote of thanks, said experiments were being conducted for the purpose of testing the efficacy of bituminous pipes. The material was as hard as fire-clay without being brittle, and would defy the attacks of vermin. One of the objects of the experiment was to ascertain whether this pipe would be affected by the Vartry water, as it is known that the Vartry water is eating through the present iron pipes in an alarming manner.

MR. ROGERS, THE WOOD-CARVER.

This was more literally his description at an earlier time than the present, for when he began his work, now many years ago, he almost stood alone and really was *the* wood-carver. Born August 10th, 1792 (at Dover), he was in his eighty-third year when he died on the 21st of last month. His first works of any importance were for Carlton House, in 1817. In 1831 he executed the decorations of the library and drawing-room in Kensington Palace, for the Duke of Sussex,—carvings so good of their kind that they have been mistaken before now for works by Grinling Gibbons. When his son, Mr. G. A. Rogers, was called in not very long ago to remove them for the lady who inherited them the name of the actual carver was not remembered. From the date mentioned until a few years ago he continued at work, and produced a large amount of carving which is scattered over the country. In June, 1872, he was placed on the Civil List, and received a pension. He retained his faculties and enthusiasm for art to the last. He had been out in the evening of Saturday, went quietly to bed, and was found sleeping his last sleep on Sunday morning, in his usual position. His eldest surviving son, Mr. Edward Thomas Rogers, late her Majesty's Consul at Cairo, was lately appointed Director of Public Instruction in the Khedive's dominions, as we took occasion to mention at the time. Mr. Rogers was fortunate in the abiding love of an excellent daughter, Miss Mary Eliza Rogers, who has herself, by her attainments and literary works, achieved reputation.

ROMAN HOUSES.

FOREMEN BUILDERS AND CLERKS OF WORKS' PROVIDENT INSTITUTION.

Mr. Roger Smith lectured before the members at the Institution, on Wednesday, March 17th, taking for his subject, "Roman Houses." There was a very large attendance, and the chair was occupied by Mr. S. J. Nicholl.

Mr. Smith said:—When we inquire into anything the Romans did, we ought to do so with the same kind of respectful interest which a man might feel in examining papers or works of one of his ancestors, supposing him to have been a person of great wisdom, and to have acquired fame or riches, or both, of which his descendants were the heirs. We are the heirs of the Romans in many things; in more, indeed, than it would be easy to enumerate. Almost all our civilisation, our knowledge of philosophy and literature, our knowledge of history, some of our laws and much of our language, came to us from the Romans. It is quite true that the Romans themselves received much of what they transmitted to us from the Greeks and from other peoples, such as the Egyptians and the Etruscans; but that does not alter the fact that the inheritance which has reached us has come down to us from Rome. If we want to go to the very original fountain-head, we often have to go further back; but in Roman law, language, learning, and building, we have the germ and root of what we now enjoy, and call modern civilisation.

We can trace many marks of Roman influence in the design of our buildings, and some marks of Roman construction, although both the one and the other were very much altered during the Middle Ages. Construction, especially, underwent such a modification in Europe generally, during the time between the Norman Conquest and the Reformation, that pieces of Roman workmanship look strange to us when we happen to fall in with them. Many changes, of course, arose also in the design of buildings; but still, although the churches and cathedrals of the Middle Ages have an appearance extremely dissimilar to the buildings of the Romans, it would be quite possible to show you, step by step, how the latter grew and altered till they gave place to the others. It would be even more easy to do this with regard to many more modern buildings, because, in the sixteenth century, architects and men of learning alike took a fresh start and went back, as you all know, to the Roman originals once more, so that, to a certain extent, what we call "Classical" European buildings are only separated from the Roman ones by such changes as three centuries may have brought about.

To some extent the rule about modern buildings being descended from Roman holds good as to dwelling-houses, and to some extent it does not hold good, and you may to-night, I dare say, like to inquire with me into the resemblances and the differences which we might expect to find between ancient Roman and modern English houses, owing to the different circumstances of the two peoples who built them and lived in them, and then we may find it interesting to see how far our expectation is borne out.

The circumstance which most of all makes a difference between the real nature of two buildings intended to serve the same purpose, is the place where they are built. It is obvious that in one locality you may easily get material which you cannot at all find in another. In Norway or Switzerland you get wood easily; in more rocky countries,—such, for example, as Yorkshire or Derbyshire,—you get stone easily; in alluvial plains, like Belgium and the basin of the Thames, you get brick easily; and a wooden building we know differs from a stone one, and that from a brick one in its very nature. But I mean something even more radical than the differences which varied materials bring with them. I refer to the effect of *climate*. In a wet climate people have to build to keep out the rain; in a snowy climate, to keep out the snow. In the North they have to protect themselves from the cold; in the South they require shelter from the heat; and it is the different conditions of climate to which are chiefly due differences in the structure of buildings. To climate, also, are due, the most important differences in the character given to architecture. Where the sun is overhead most of the day horizontal cornices produce powerful shadows, and are accordingly among the most important means of producing effect which the architect possesses. On the other hand, with a low sun, sending slanting rays, vertical projections throw great shadows; while horizontal cornices lose their effectiveness. Accordingly, in the architecture which grew up in the North, I mean Gothic architecture, buttresses of great projection are striking features, and the cornice is a mere nothing. While in Classic architecture, which was developed in very sunshiny countries, the cornice becomes the important and distinctive feature, and the buttress is almost unknown. This sort of comparison may be pushed further; but I have said enough to show you that climate has a sensible influence on architectural design.

Now the Romans were a people in the centre, or rather south of the centre, of the great Italian peninsula; they fixed their capital at Rome, and spread north and south from this, and the climate of Italy was the thing which formed their habits. The climate of Italy, without being burningly hot, is a great deal warmer than ours. At this time of the year, for instance, in Rome you would have bright sunshiny days and warm nights, and no such thing as a fire would be thought of. In such a climate you can fancy that people would not want to spend all their time in-doors, that out-door life would be a pleasure to them, and that they would dress very differently to ourselves. As to their dress I shall not say anything to-night, except that, as you will understand from representations, such as statues, coins, and bas-reliefs, it was far looser and lighter than ours, and left the arms and part of the legs bare. A house is but a more solid kind of dress, made to fit a whole family, and accordingly you would expect shelter from heat and glare; fresh air and cool water to be provided in the construction of a house for such a climate.

The Romans were a slave-holding people. A certain part of a Roman's house was set apart for the family, to whom only the most intimate friends were admitted; while another part was used for public receptions and business, they not having offices or separate places of business, as is now the case in most large cities. We now get some idea of what might be supposed to be the requirements of a citizen of ancient Rome, but still we want some basis or plan of what the houses consisted to be able to give a correct idea of what they really were, and fortunately this has been supplied in the discoveries made in the excavations of Pompeii, and the adjoining country town of Herculaneum. Here we find ourselves among ruins which transport us at once to the very homes of the Romans, and enable us to

understand,—in fact, to see with our own eyes,—what the arrangement of a Roman dwelling-house was, and how it was carried out to its minutest details. The buildings of Pompeii seem to have been filled up with fine ashes, which gradually consolidated. When the existence of ruins underground had been discovered, this was very easy to dig out, and large portions of the town have accordingly been laid bare. The upper parts of the walls, &c., have perished, but the lower parts, to a height of 7 ft. to 10 ft., have been preserved, comparatively speaking, fresh and uninjured.

A Roman house was in one respect the very reverse of an English one: it had no windows looking *out*, all looked *in*. We occasionally find in a very large house in England a court-yard, with some unimportant windows looking into it. In the Roman houses this was the universal rule. With us it was once, to some extent, the same, but at the present time every window which we wish to make cheerful and pleasant must look out. With the Romans it was just the reverse. Hardly any window looked out. This arrangement of house is followed by Oriental dwellings, as no doubt you are aware, and this partly springs from the climate, but is also partly occasioned by a difference in mode of life. The streets were dusty, hot, and noisy, and it was not from them that fresh air, cool shade, and tempered daylight could be drawn; accordingly an open space being reserved in the heart of the house the room looked into it. The Roman houses were very few of them lofty.

When any one was admitted into this inside space he was in the heart of everything. How, then, could the family seclusion and privacy be kept up? By having *two* open spaces one beyond the other, and admitting the ordinary visitors only to the outer one next the road, reserving the inner one for the family and friends; here we have the principle on which the Roman house was constructed. It consisted of an outer quadrangle or court, called the *atrium*, surrounded by buildings which looked into it; an inner quadrangle or court, called the *peristyle*, placed further back, also surrounded, or partly surrounded, by buildings which looked into it. Between the two quadrangles was a kind of parlour that opened both front and back, and was known as the *tablinum*. These three features just as much formed the standard skeleton of a house as a drawing-room, dining-room, and entrance-hall make up the outline of an English house; and as far as we know the succession of atrium, tablinum, and peristyle was on the whole very uniformly preserved.

Mr. Smith here gave a long and interesting description of the Pompeiian house at the Crystal Palace, which was illustrated by various large diagrams, many of which were lent by Professor Donaldson and Professor Hayter Lewis, of University College; and he then went on to say:—

The Romans did not hang up pictures, as we do, in frames, but when they wanted a picture in a room, they sent for the artist, who painted it on the wall of the room itself, and left it there. Of movable ornaments, statues are what have come down to us chiefly, though possibly, indeed probably, movable pictures were among the precious possessions of a wealthy Roman. It seems likely they were not hung against the walls, but were placed on stands; at any rate, it is quite certain that a Roman did not depend upon the movable pictures to furnish the walls of his house as an Englishman does.

The house presented, when you were inside, a number of beautiful points of view. Its colouring was contrived so as to make it a harmonious and pleasing whole; and as, when the tablinum was open, you saw all across from back to front, there must have been a pleasing mingling of intricacy and beauty in the view on first entering the atrium, such as few other interiors could give. Even the representation at Sydenham gives you but a feeble idea of the actual beauty of one of these interiors, unless you see it under sunshine so bright as very rarely indeed visits London.

We have not at all the same means of forming even an opinion upon the nature of the Roman villas in Great Britain as we have of arriving at certainty about Pompeii. They have been, as a rule, plundered and destroyed, and it is only such ruins as were not worth attacking which are now discovered. When we discover a Roman villa in England, we only find the stumps of walls and portions of the mosaic pavement, and very little else. This is very different from Pompeii, where you find the walls standing to a height of 6 ft., and 8 ft., and 10 ft., no demolition whatever having taken place, except of the upper stories. The lecturer here described the leading peculiarities of Roman masonry and mosaic work, and of such features as are most readily recognised in Roman remains when discovered in this country.

In one class of buildings the Roman arrangement has come down to England, and remains at the present day. True, it has undergone modifications, and is hardly, perhaps, at first sight to be recognised, but still it has reached us by an unbroken tradition. I refer to the cloisters attached to our cathedrals and the quadrangles of our collegiate buildings. These are the direct successors of the monastic buildings of the middle and early Christian ages, which, without doubt, were arranged on the same plan of a quadrangle, with rooms round it, which we have found was the Roman manner of building.

The early Christian churches of importance were built in the time of Constantine; and when it became necessary to add to them buildings in which the clergy might reside, there can be no doubt that the Roman manner of building was still in force; and at Rome or Ravenna, or elsewhere in Italy, if a house for the clergy was built, its rooms would, as a matter of course, be disposed round a quadrangle covered at the sides and open in the centre,—in fact, a peristyle or atrium, with rooms round it, was the natural thing to build in Italy in those days, just as much as a tall block of buildings with a staircase in the heart of it, and windows back and front, is the natural thing to build nowadays in London. But mark what happened: the atrium, originally added in front of a church, and generally known as a forecourt, soon was abandoned; but this leading principle of building once adopted was, after all, retained, just as, if it were fitting. I could show you that the leading principle upon which Constantine's churches were built has also been retained to the present day. The religious houses increased in size, the peristyle grew into a cloister, and as a cloister it remains, and, as a cloister, was introduced into every country of Europe, our own not excepted. When one visits a cathedral cloister, or sees a college quadrangle at Oxford or Cambridge, one recollects the Roman house with its atrium and peristyle; for what we have before our eye is nothing else than this identical feature, modified, it is true, but not done away with. The sight of such a feature should remind us all of the strong and lasting influence which the Romans exercised over the ways of thinking and building in this country, and, indeed, in all the countries of Europe.

Mr. Bedford proposed a vote of thanks to Mr. Roger Smith for his lecture, which was seconded by Mr. Mark H. Judge, as was also one to Professors Donaldson and Lewis, for the loan of the many valuable diagrams by which the lecture was illustrated. The thanks of the meeting were given also to the Chairman for the loan of several specimens of Roman tiles and other remains. The Chairman, in acknowledging the vote of thanks, spoke at some length in reference to these old remains of Roman work in Britain; and Mr. Smith suggested to the members that when they were engaged in country work, with little of interest to call for their attention, they might think of "Roman Houses," and be on the look out for discoveries. These have been sometimes made by noticing the dew early in the morning, when the line of the walls may be traced in the different density of the dew.

TODMORDEN NEW TOWN HALL.

This building, the gift of the Brothers Messrs. Samuel, John, and Joshua Fielden, M.P., to their native town, and of which we give a view, and shall hereafter add plans of the principal floors, is to be opened to-day, when a large gathering of the district is expected, as at the same time the bronze statue of the late John Fielden, M.P., father of the gentlemen named above, is to be unveiled, probably by the Right Hon. Lord John Manners, M.P. The statue was executed by the late J. H. Foley, R.A., at a cost of 1,000*l.*, and with its polished and moulded granite pedestal has been "raised by public subscription in gratitude to him whose persevering efforts succeeded in obtaining the Ten Hours Act," to which the Royal assent was given 8th June, 1847, and by which the time of labour was limited in the case of the then overworked women and children employed in the cotton and other mills. The walls of this building are faced externally with Ringby stone, the main story being divided into bays by three-quarter engaged columns of a composite order on three sides, and wholly detached and cabled columns to the semicircular end with richly carved capitals. The architraves of the windows and niches are also richly carved. A bold cornice with carved interlacing frieze runs continuously round the building, the Tudor rose being introduced emblematical of the two counties of York and Lancaster in which the building stands. The cornice is surmounted at the west entrance end by a pediment, which stops the roof, and which is filled with grouped figures, sculptured in high relief, representing the chief manufactures and agriculture of these two important counties, the ten figures each averaging 8 ft. in height. The roof is wholly covered with lead.

The semicircular principal entrance-hall is also faced internally with Ringby stone, and polished Hopton Wood stone columns and pilasters support the structure over. A stone staircase forms the communication with the large hall, which latter is 97 ft. by 45] ft. with a proportionate height—finished with an elaborate enriched cove and ceiling, in which latter are three large sunlights, having ornamental pendants. The side windows and circular lights over are filled with embossed plate glass. The walls are inlaid to a height of 5 ft. with Minton's tiles, and the mouldings and ornaments picked out in gold, colours, and diaper work above. In this room are eight circular bas-reliefs, having life-size figures representing Peace, Navigation, Engineering, Commerce, Justice, Lancashire, Science, and Agriculture; and over the platform at the east end are three other larger groups in high relief representing Art, Music, and Literature, the backgrounds being gilt mosaic.

Under the platform are cloak and retiring rooms, reached from the hall and staircase. At the west end of the hall is a spacious gallery accessible from the public or west entrance stairs, which also communicate with the large hall, cloak-rooms, &c. The hall is seated with oak chairs, and the gallery with fixed oak seats. From the west entrance are approached the board of health, reading, and school board meeting rooms, solicitor's room, and petty sessions court, the latter, from its being situated in the two counties, will obviate many of the inconveniences in the business of the court, which have hitherto existed. The magistrates' bench is enclosed with panelled and moulded oak framing, and is accessible both from the body of the court and the magistrates' room. In front of the bench, and at a lower level, is provided accommodation for the clerk, solicitors, reporters, witnesses, police, &c., with raised seats for the public. Beyond the court are the police and hallkeeper's rooms, with strong and other closets. The entrances are closed by massive oak doors, which are arranged to open outwards.

One peculiar arrangement of a portion of the building is its being constructed over arched watercourses, which divide the two counties, the superstructure being carried by the arches, assisted by massive cast-iron girders and York stone landings. The portion of the basement which is excavated comprises public conveniences, heating apparatus, and store-rooms for seats from the hall with which a walled shaft communicates. The hallkeeper's rooms are situated over the semicircular entrance-hall, and are reached by a turret-stair communicating with each floor and the roof of the building. The warming arrangements were contracted for by Mr. Phipson, and consist of hot-water pipes with coils, and a chamber almost surrounding the large hall. The walls being built hollow, are made to serve for warming and ventilation. The gas lighting was contracted for by Messrs. Strode; the decoration and furniture were undertaken by Messrs. Trollope; and the sculpture, bas-reliefs, and plaster-modelling by Messrs. Mabey.

The building contract has been carried out by Messrs. Neill & Sons, from the designs and under the superintendence of Mr. John Gibson, of Westminster; Mr. J. F. Horsfall acting as clerk of the works. Messrs. Neill have also executed the stone background to the statue outside the building, and which was not originally contemplated in the position shown in our view. The carving to this and the remainder of the building has been executed by Mr. Thomas Colley.

It may be interesting to mention that Todmorden is a manufacturing town of about 15,000 inhabitants, and it is the intention of the Messrs.

TODMORDEN TOWN HALL.—MR. JOHN GIBSON, ARCHITECT.

Fielden, on the day of opening the Hall, to convey the building and its site (the entire cost of which will fall little short of 40,000*l.*) to trustees for the benefit of the town, and to provide the necessary accommodation for the transaction of the public business. It is proposed to allow the hall of the building to be used for meetings, concerts, lectures, and other purposes tending to afford instruction or amusement to the public; and should the proceeds from so doing exceed the amount required for the repair and maintenance of the building, the residue to be devoted towards objects for the benefit of Todmorden or the vicinity.

THE LATE MR. W. C. AITKEN, OF BIRMINGHAM.

BIRMINGHAM has lost a valuable and worthy citizen by the death of Mr. W. C. Aitken, which has just now occurred there. For years he has been mixed up with every movement in the town connected with the art and science training of his fellow-townsmen, and every one there acknowledged his ability, perseverance, and integrity. He was born at Dumfries on the 3rd of March, 1817; the son and the grandson of men who had skill in the brass foundry trades. He was educated at the Dumfries Academy, where one of his fellow-students was Robert Thorburn, afterwards well known as a painter. Dumfries was too limited a field for Mr. Aitken's peculiar powers. For some time he assisted in his father's works, and then, while still a youth, he came to Birmingham as an "improver." He then went back to Dumfries; but in 1844 returned to Birmingham. His first engagement was at the works of Messrs. R. W. Winfield & Co., in Cambridge-street, where, we believe, he was intimately connected with the invention of Nature-printing. On leaving Messrs. Winfield's he held a short engagement with Messrs. Hardman & Co., and then, removing for a time to Coventry, he became manager at Messrs. Skidmore's Art Manufacturing Company. He was eager, however, to return to Birmingham, and consequently accepted an engagement as manager at Messrs. Hardman's new works in Newhall-hill, a position which he held until about three years ago, since which period he has remained out of active business employment, though still busily occupied with his labours for the promotion of the teaching of science and art.

He was appointed to conduct parties of workmen to the Paris and the Vienna Exhibitions, and the Reports, which were written under his guidance and suggestions, edited by him, and issued by the local Chamber of Commerce, are admirable contributions to the history of industrial art. His own contribution on this occasion was warmly referred to in our pages, as indeed most of his good doings have been, for he rarely failed during many years to communicate with us on such topics and views as occupied his mind. He was a worthy and valuable man, and we are unaffectedly distressed by the news of his death.

THE NEW PIER AT EGREMONT, LIVERPOOL.

THIS pier is approaching completion, and was opened on Thursday last. A wide, open space has been formed upon the site of the former offices, engine-house, and the open netting in which the old stage was worked. The netting has been arched over and the surface levelled, raised, and flagged to a height of 4 ft. 6 in. above the level of the former pier. Upon this space the ferry station has been constructed. It consists of a hall built of brick, with an open timber roof. Within it are the waiting-rooms and other conveniences, and also the turnstiles and contractors' gates. A projecting roof to Tobin-street enables cabs to set down passengers under shelter. There is a similar roof riverwards, with seats underneath. On passing through the station there is the pier, a roadway 20 ft. wide, which projects 95 yards into the river. The roadway is of pitch pine, 3 in. thick, caulked, and laid longitudinally upon rolled wrought-iron transverse joists, the joists being secured to two lines of continuous wrought-iron, latticed girders, 4 ft. deep. The whole is supported at intervals of 35 ft. by cast-iron columns in pairs braced with wrought-iron ties. The columns are 12 in. in diameter and 1 in. thick, having at the ends a broad flange 3 ft. in diameter, sunk 5 ft. into the clay of the foreshore. The outer end of the pier is formed of two groups of traced cast-iron columns, arranged as tripods, and meeting at their heads within a heavy casting, upon which a wrought-iron box-beam is secured to the line of the roadway. This arrangement provides a finish to the pier, and a support for a bowstring lattice girder-bridge. The bridge, which is 80 ft. long and 9 ft. wide, works upon steel joints within forged blocks, secured to the box-beam at its inner end, its outer end being supported by a similar girder, under which are placed two hydraulic coupled rams, having masonry foundations on the foreshore. The outer pierhead or dolphin is formed, like the inner pierhead, of two groups of columns, also arranged as tripods, connected on the top by a heavy wrought-iron worked box-girder, 4 ft. 6 in. in depth. Within it the heads of the columns project, and are riveted so as to form one structure. The columns are of wrought-iron tubes, 20 in. diameter, and ½ in. thick, stiffened with heavy angle-iron, and braced at intervals of 10 ft. by rolled wrought-iron joists, 12 in. deep, having a base in the mooring line of 66 ft. The whole of this wrought-iron work is riveted up, no bolts being used in any part. The bottom end of each of these columns is received in the socket of a cast-iron foot pile, 2 ft. diameter and 2 in. thick. The foot piles are screwed into the foreshore to varying depths, according to the nature of the foundation. The diameter of the screw is 4 ft. 6 in. To the river face of the dolphin a timbered fender of American elm, 2 ft. thick, in whole baulks, is secured, served with heavy iron rubbing-plates outside. The distance to low water at spring tides being 240 yards, it has been necessary to resort to a travelling platform as a means of communication with the ferry boats when they cannot approach the pierhead. The contractors for the pier and stage are the Darlaston Bridge and Roofing Company (Limited), by whose foreman of works (Mr. James Keen) the erections have been concluded. The contractor for the masonry was Mr. James Redikalgh, of Liscard; the buildings were entrusted to Messrs. J. & T. Mason, of Egremont; and the hydraulic machinery has been constructed by Messrs. Emmerson, Murgatroyd, & Co. (Limited), of Stockport, Liverpool, and Seacombe. The works were designed by Mr. Carson, the engineer and manager of the board's ferries, and have been carried out under his supervision and that of Mr. T. H. Lee, surveyor to the board.

THE MUSEUM OF DECORATIVE ART.

IN these days when special exhibitions do abound, and when each varied form into which art concretes itself, finds some independent home for itself we had hardly thought that room for any fresh collection existed without trenching on the domain of some prior one, but a visit to that established by Messrs. George Trollope & Son, in Halkin-street West, Belgrave-square, amply demonstrates that a hitherto unthought of void has been filled. In it they have massed together a large number of examples of those decorative processes with which every architect ought to be to some extent acquainted, and here they have brought into one view much that is known and practised relative to decorative art in various parts of Europe. Nor have they confined their galleries to the exposition of applied decoration, but have also collected therein a number of those decorative or useful accessories which add to the elegance and increase the comfort of our homes. Two large and lofty galleries are devoted to these purposes, and the first portion of one of these is set apart for the display of such fixed decoration as pertains more directly to architectural enrichment. Its floor is devoted to specimens of pavements, and chiefly to that revival of the art of mosaic which in these latter days has been so extensively used on the Continent, and which we believe was mainly introduced into this country by the director of this museum, Mr. G. T. Robinson, who has abandoned the more general pursuit of architecture, to devote himself to the development of its decorative accessories. Here are laid down various illustrations of mosaic treatment applied to floors, and executed in accordance with the practice of the ancients, some of them being absolute reproductions of such Roman works as yet remain in this country, whilst others show its adaptation to more modern styles of architecture. No flooring process, indeed, lends itself more readily to the treatment of design than does this of mosaic. There is in it no need to repeat the same pattern, nor is any saving of cost effected by doing this.

The cost of cutting marble into various forms so as to reproduce or revise the *opus sectile* so largely employed in the days of the Renaissance, and in that form of Mediæval art which in Italy preceded it, has prevented its adoption in more modern times, but here is laid down an illustration of the means by which a similar effect can be obtained at a very moderate outlay. This consists in staining slabs of marble in various tones to divers patterns, which bids fair, when further developed and its durability has been tested, to be a process of much decorative value, and spaces are reserved for illustration of the geometric mosaics, or *opus alexandrinum*, so common in the Romanesque epochs, and which when completed will demonstrate still further processes of marble work as applied to pavements.

The wall facing the entrance is devoted to the exposition of the applicability of the old Italian process of *sgraffito* to internal decoration, and certainly for the walls of our lofty staircases, or our entrance-halls, this mode of decoration seems to present great adaptability. On a ground of coloured plaster a thin skinning of white is spread, which, when partly dry, is etched through with a stylus exposing the coloured ground, by which simple means a durable and decorative result may be obtained. When, as in this illustration, subjects in relievo are inserted as camei very great variety is produced at a moderate cost; and here again the freedom from the need to reproduce the same ornamentation gives a great artistic value to it and renders it particularly serviceable to those who prefer to think for themselves and impress their own originality on their work. Specimens of it in various styles, some derived from the richly-wrought margins of those Parisian books of Hours which formed the glory of the first years of the sixteenth century in typographic history, others inspired by Holbein's facile fancy, with some of more recent character, show how readily this process adapts itself to decorative expression. There must be a competent artist at the bottom of such work, to make it satisfactory.

The doorway which forms the centre of this wall comprises some novelties, some of them as yet being merely tentative efforts at new processes, which will probably bear greater fruit hereafter. Thus the architrave is decorated with plaques of vitreous enamels, and the frieze consists of a leather panel inlaid with gilt glass work, whilst the doors themselves are illustrative of a wood-staining process recently explained by Mr. Robinson in his paper read before the Institute of British Architects on March 1, and reported in our columns. The opposite side of the vestibule is devoted to what may be considered "hospital practice" of decoration, and exhibits many means by which old, damaged, or damp walls may be treated; such as riveting them with thin wood veneer, mounted on canvas, or lining them with prepared tinfoil, the which latter, by the way, when its reflective surface is preserved by a lacquer as shown in one example here, presents considerable advantages for our darker passages and well-hole staircases, forming a surface which throws off almost every ray of light that falls upon it.

Various experiments are also being carried on in quest of some means of applying colour directly to new plaster, and certain staining processes thus essayed bid fair to give good results; and an illustration of stained marbles for dados and wall treatments shows how effectively a common monotoned limestone, of no great intrinsic value, may be converted into an artistic medium by a combination of science and art. A want has also been supplied by the collecting and bringing together specimens of many of the principal marbles whereby the character and cost of each can be compared, and some varieties new to the English market are thus introduced.

The ceramic collection contains a variety of tiles and plaques, from the more costly products of the best French potters to the crude but interesting works of those smaller and eminently conservative potteries of Southern Italy, in which pattern and process have been reproduced from father to son for many generations past, and thus the archaic qualities of an older time are brought into juxtaposition with the most scientific researches of the present day,—not always, so far as artistic merit is concerned, to the exaltation of the latter. If the market thus opened is not spoiled by the demand which is already being made upon it, a great and valuable adjunct will thus be given to the architect by the exploitation Messrs. Trollope have thus

made; for, though cheap, these tiles are very good. The glazed stoves of Germany and France here shown bid fair to be of great use in our entrance-halls, offices, and other places where room is restricted, and a steady heat, combined with slow combustion, is required, and the artistic modelling and the beauty of the glaze exhibited by some of these render them works of considerable artistic and architectonic merit.

Parquetry and wood inlays for floors from France and Germany are exhibited from the thinnest veneer, which can be applied to an old floor without disturbing it, or the ceiling beneath it, to the thickest solid planking, forming a floor of itself. Door-furniture from Belgium, and some cleverly-wrought metal-work from France, which is produced at prices much below anything of the kind we have in England, are also interesting exhibits. All these things pertain to constructive decoration; but there is also to be found a large variety of wall-hangings of silk, of embossed leather, woven fabrics, and the recently revived painted cloths for wall-coverings, pounced and gilt leather for curtains, and some fine old tapestries from the ancient looms of Flanders, Spain, and France.

In furniture we noticed some fine old carved and gilt Italian *cassoni*, tables and mirrors, a collection of French furniture, embracing the styles which prevailed during the reigns of François I., Henri II., Louis XIV., Louis XV., Louis XVI., and of the period of the First Empire; together with specimens of English furniture by the best makers during the reigns of Queen Anne and the three Georges. In short, to the architect and the amateur the museum thus established presents many attractive and instructive features, and we commend it to their attention.

PROGRESS OF RAILWAY CONSTRUCTION.

NEW WORKS AND BUILDINGS.

THE expansion of the railway system in the erection of new works and buildings on the several great lines in various parts of the country continues with unabated activity, as is shown by the proceedings of the different companies at their half-yearly meetings which have been held within the last few weeks.

The statement made by the chairman of the North-Eastern Company proves that the expenditure of that company now going forward in new and extended works of various descriptions is on a scale of almost unequalled magnitude. He said they had just finished an extension of the dock at Middlesbrough at a cost of 120,000*l.*, and they were at that moment forming in Middlesbrough a new station at a cost of 80,000*l.* They were also making a railway from the Hartlepools by a tunnel under the Tees, which was a very expensive undertaking, as it was to cost the company 400,000*l.* They were likewise making a railway from Stockton, in the immediate neighbourhood of Middlesbrough, to Castle Eden, at a cost of 290,000*l.* The works for that line had just been let. At Hartlepool itself the company was also busy. At West Hartlepool they were providing a railway and dock at a cost of 150,000*l.*, and at Stockton they were erecting a new goods station at a cost of 40,000*l.* This showed that in the Tees district alone they were about to incur an expenditure amounting to 1,045,000*l.*, and this was exclusive of the large outlay which would have to be incurred in making sidings and providing means for working those lines of railways. They were likewise making a new line at Sunderland at a cost of 260,000*l.*, and a new station at South Shields to cost 30,000*l.*, together with a new station at Ferry Hill at a cost of 70,000*l.* Also a railway in the coal district at a cost of 41,000*l.*, and a line north of Newcastle to Warkworth at a cost of 114,000*l.* They were further making another railway alongside the Tyne, from the Bicar line, and in the heart of the North Tyne trading districts, which would cost 250,000*l.*; and for all these lines, apart from the cost of rolling stock, it would be seen that in that particular district of Durham and Newcastle alone the expenditure of the company would not fall far short of two millions sterling. The company are also erecting a large new station at York, and constructing branch lines at Tweedmouth in connexion with a dock which they are making there; and the contract for the construction of a line between Swinton and Knottingly is shortly to be let. The estimated sum to be expended on works in progress, during the current half-year, is 987,000*l.*, or nearly a million sterling.

The Midland Company expended 1,313,000*l.* during the past half-year in new works, 439,000*l.* of which was on the Settle and Carlisle line, which is expected to be ready for opening next year, when the Midland will have direct and independent communication between London and Edinburgh and Glasgow. The estimated expenditure during the current half-year in new works is 1,650,000*l.* The first building contracts for the Manchester Central Station are expected to be entered into in a few weeks, and the construction of the new line at the north end of Liverpool is to be at once commenced. In answer to a question, the chairman stated that the St. Pancras Hotel was expected to be completed in March next year. He added that the experience they had already had in carrying on the hotel was satisfactory.

The estimated expenditure of the Great Northern Company during the ensuing half-year in new works is 150,000*l.*, and 165,000*l.* in new stock, which will be required for the new lines in progress. The expenditure on works during the past half-year was 886,094*l.*, of which 58,652*l.* was on the Highbury and North London line. The works at the new goods depôt at Farringdon-street, and also the new buildings and sidings at King's-cross, to accommodate the local passenger traffic, are actively proceeding.

At the meeting of the East London Company it was stated that half the tunnel under the London Docks was completed, and the second cofferdam was now in course of erection. The chairman said that the contractors were proceeding with vigour on all parts of the line. They had then about 800 men employed on the works, and in a few days would have several hundred more. The part beyond the London Docks would be completed by the time the trains could pass under the docks. They had reason to believe that in completing the second portion of the tunnel there would be a great saving of time and expense, as it was being carried out entirely under the direction of their engineer, Sir John Hawkshaw.

At the meeting of the London and North-Western Company, 480,000*l.* were voted for the construction of new works, in addition to others in progress in various parts of the country; also 100,000*l.* for new steamboats, and 240,000*l.* for additional engines, carriages, and wagons. The chairman stated that they were spending a great deal of money both in Liverpool and Manchester, and they had spent a large sum on the Euston terminus, and he hoped they would have to spend more in providing the facilities which the increased traffic and the accommodation of the public demanded.

The Great Western Company were authorised by the shareholders at the half-yearly meeting to expend 200,000*l.* during the half-year in new works, 25,000*l.* of which was on account of a new goods station at Bristol, and 11,000*l.* on the enlargement of the Swindon Station. Referring to the progress made in the construction of the tunnel under the Severn, the engineer reported that the heading was now being driven, and that they had got some 220 ft. under the Severn, and so far as the heading had gone the stratifications were all they could desire. It was perfectly dry, and they had every reason to believe that they should not meet with any difficulty to impede their progress.

At the meeting of the London, Chatham, and Dover Company, it was stated that the contract for the Chatham Dockyard line had been let upon terms approved by the Admiralty, and the works would be vigorously prosecuted with the view of opening the line in the present year. The Chairman stated that the Government would pay interest upon the cost of construction whatever the interest might be. He had no doubt the company would derive enormous benefits from the construction of the line. With reference to the Holborn Hotel, he stated, as we have already said, that the tender of Mr. Webster for its construction for 70,000*l.*, had been accepted, and on its completion it would be occupied at a rent which would pay 6 per cent. on the outlay, in addition to which the company would receive 10 per cent. on the profits of the business of the hotel and refreshment departments of that station.

It was announced at the meeting of the South Eastern Company that plans had been approved for the extension of the accommodation at the Bricklayers' Arms good station, and that the works would at once be carried out as part of a general scheme for gradually increasing the accommodation there. The working plans for the Blackfriars branch were also completed, and the directors were only waiting for more favourable conditions of the labour market to commence the construction of the line and sidings. The works on the Greenwich line were in course of very rapid progress, and it was the desire of the directors to complete the communication, and secure a duplicate line for local through traffic, with as little delay as possible.

The report and proceedings at the meeting of the South-Western Company showed that several new works were in progress, including the doubling of the Portsmouth line, and also that between Farnham and Aldershott, whilst other considerable works and improvements were going forward at Waterloo, Clapham, Woking, Basingstoke, and other stations. The contractor had likewise commenced operations on the Joint Portsmouth Extension line.

At the meeting of the North London Company it was stated that the works in connexion with the widening of the City branch between Shoreditch and Broad-street, were approaching completion, whilst the new line and works at Poplar, preliminary to the construction of the new dock, were in a forward state. The chairman said that they intended to expend 70,000*l.* on the new dock at Poplar.

With regard to the extension of the Metropolitan line to Aldgate, the chairman stated that they had already spent 200,000*l.* or 300,000*l.* in the purchase of land for the extension, and that the expenditure of 150,000*l.* more would enable them to construct and open that valuable piece of line. The feeling of the Board was, that it would be desirable to purchase the remainder of the property as soon as the price of labour and materials showed something like a further reduction, and then invite open competition for the construction of the works.

The report of the Manchester, Sheffield, and Lincolnshire Company stated that the works on the Manchester and Stockport extension was in progress, and it was expected that the line would be opened during the present half-year. The new graving-dock at Grimsby, and the works in connexion with it, were also proceeding with all reasonable speed.

The Lancashire and Yorkshire Company are about to expend 300,000*l.* on the execution of new works during the current half-year. The works on several of the Company's branch railways in Lancashire and Yorkshire are in progress, and also the works of the new dock at Fleetwood, and the rebuilding of the Preston station. The company are likewise erecting extensive new carriage and wagon works at Newton-heath, near Manchester, and they will shortly manufacture all their rolling stock, the chairman having stated at the meeting that they believed the work they required could be done much better in their own establishment than by outside contractors.

The North Staffordshire Company, at their meeting, sanctioned the expenditure during the current half-year of 155,000*l.* in extensions, sidings, warehouses, and new and enlarged stations at different points on the line, including new stations at Newcastle-under-Lyne, and Etruria.

DARLINGTON GRAMMAR SCHOOL COMPETITION.

A MEETING of the governors was held on Thursday in last week, under the presidency of Mr. David Dale, to receive the report of Mr. John Giles, their advising architect, upon the designs submitted in competition for the new schools by local architects.

After a very careful examination of the competing designs, the referee advised the selection of the design marked "Simplicity and Economy." This suggestion was adopted by the governors, and the successful architect, Mr. Hoskins, of Darlington, apprised of their decision.

The school is for the education of 200 boys, under an endowment dating from the reign of Elizabeth.

The design selected is Gothic in style, and the estimated cost is 8,000*l.*

The competition was limited. The conditions (which were framed by Mr. Giles) provided that each of the architects not selected should receive a fee of fifteen guineas, and that the author of the design adjudged the best will be employed to carry out the work, at a commission of 5 per cent. upon the outlay (which commission is to include all charges, except that of 1½ per cent. for bills of quantities to be charged to the

builder, and prepared at the sole risk of the architect or his surveyor).

It is, however, to be understood, that unless tenders can be obtained from responsible builders, within 10 per cent. of the estimate, the plans may be returned to the competitor without liability on the part of the governors.

WOOD CARVING IN ENGLISH HOMES.

In the course of some observations made by Mr. Jenner as to the wood-carving of the Bernese Oberland, in reply to inquiries by Lord Derby, Mr. Jenner says the occupation of wood-carving is of considerable value as affording training for other trades. The Oberland child, brought up in the midst of an unceasing school of modelling and design, acquires special qualifications for making a first-rate carpenter, locksmith, engraver, stone-cutter, decorative painter, architect, &c. For this reason Mr. Jenner suggests that the introduction of wood-carving into the Board schools of London might not be unattended with beneficial effects, and that none the less because the extra expense incurred for the instruction of the children ought to be repaid by their earnings after the system has been a few years in existence. The intuitive love of every Anglo-Saxon boy for cutting up wood with a knife, which usually takes the form of boat-making in England, he thinks might be easily turned to account in imparting the elements of the art. As wood-carving on a large scale is greatly facilitated by the use of various kinds of machinery, it might be possible, when the system had reached a riper development, to add a certain amount of mechanical knowledge to the other requirements of the frequenters of public schools. As a branch of foreign labour, wood-carving would appear to be quite unexceptionable, economically speaking, in England. It need encroach upon no existing industry, and would have little to fear from competition for some years to come, thus being secure of two of the first essentials for the labour of criminals, non-interference with honest labour, and a free field for a sufficient time to make the system work in regular routine. The country might thus by degrees be endowed with a new branch of industry, for which, owing to our great mechanical skill, and the especial facilities we possess for procuring the most beautiful and the rarest woods at comparatively low rates, Great Britain would appear to be peculiarly fitted. It is hardly too much to say that what the zeal of one man, Christian Fischer, of Brianz, was able to achieve for the benefit of his fellow-citizens of the Oberland in 1816, is not beyond the powers of the thousands of highly-qualified gentlemen who are striving to advance the cause of education in England. At all events, as Mr. Jenner observes, there would be but little harm in trying the experiment in one of the reformatories or prisons.

NATIONAL PROVINCIAL BANK OF ENGLAND, PORTSEA.

The directors of this important and long-established banking corporation (numbering as they do more than 130 branches throughout England and Wales) finding the present premises at Portsea too small for their rapidly increasing business under the superintendence of their local manager, Mr. Payne, resolved to erect others on "The Hard" on a more suitable and imposing scale, from the designs and under the superintendence of Mr. Gibson, of Westminster.

The building style is Italian, faced with Portland stone, and has a frontage of about 40 ft., divided into four bays by boldly projecting rusticated piers, with arch-headed windows to the ground story.

The fourth bay forms the lobby through which are entered the private residence and the banking-room by separate doors. The latter room provides ultimate accommodation for a staff of twenty-two officials, the fitting up for which is executed in Honduras and Spanish mahogany French polished. In front of the counter is the public space, which latter is paved with ornamental tiling,—a space being reserved as a waiting recess.

An ornamental lantern glazed with embossed plate-glass lights the rear of the office. The front windows are of teak, and glazed with clear plate-glass. These will be protected externally from the south sun by sunblinds, Bunnett's revolving iron shutters being provided for security. The entrance doors and lobby framing are also of teak.

The manager's room is approached from the public space, and the strong-room for cash and securities adjoins that for books, customers' plate, and other valuables; and every modern appliance has been adopted to render them fire and thief proof. The lavatory and other conveniences have been suitably arranged. In the basement are the warm-water apparatus, spaces for fresh air and ventilation to the office, &c., an additional strong room, and the requisite vaults.

The two stories of the building above the Bank are surmounted by a bold cornice. The rooms here and over the strong-rooms will be occupied by the residents in charge of the premises.

The contracts for the works and fittings were taken by Mr. George Burbidge, who appears to have executed them in a satisfactory manner.

We believe the new buildings will be opened for business in a few days.

THE LOCAL GOVERNMENT SANITARY POET.

A couple of weeks since, on the vote for the expenses of the Local Government Board, an Irish member rose in the House and said it appeared there was a "Local Government Sanitary Poet" in Ireland, and he should like to know what his salary was, as the following was a specimen of his mode of composition:—

"There's a skin without and a skin within,
A covering skin and a lining skin;
But the skin within, as the skin without,
Doubles inwards, and goes completely throughout."

Sir Michael Hicks Beach, the Irish Chief Secretary, merely stated, by way of reply, that no doubt if there was such an office as that of Government Sanitary Poet in Ireland, there would be plenty of applicants for it; but there was no such person, and he could afford no explanation regarding the lines. There may be no officially appointed sanitary poet in Dublin in the sense of a laureate, but there are certainly strong reasons for believing that some rhyming official at the Board in Dublin, not oppressed by the labours of his office, has taken upon himself the duties supposed to appertain. Dozens of copies, bearing the heading of "Sanitary Rhymes," have been forwarded to several corporate and local boards in the sister kingdom, treating, in a kind of nursery rhyme, of "the skin, the blood, the nervous system, air, water, and fire." The success of the poet is not marked, though his verses are somewhat remarkable. The reception of one of these pamphlets by the Drogheda Corporation, some weeks ago, led to a very serio-comic discussion, some of the members taking it for granted that the pamphlet sent to them was genuine as a sealed order, while others doubted that it came from the Local Government Board at all. The only instructions sent with the packet of pamphlets forwarded to the different boards, were the words "For distribution." Two or three further specimens in addition to the one quoted above of the sanitary poet's power of versification will probably amuse, as the House of Commons was only favoured with a single verse. The poet, whoever he be, would seem to have a reverence for the doctor, knowing, perhaps, what an important personage that officer is under the Act of 1872, and in the Acts now under the consideration of the House. Of the medical man the poet thus speaks:—

"The doctor, you know, examines your tongue
To see if your stomach or bowels are wrong;
If he feels that your hand is hot and dry,
He is able to tell you the reason why."

This verse does not soar very high, but it is quite possible the doctor knows the reason why, if he be a friend of the poet. The poem purports, said a member of the Drogheda Corporation, to speak of sanitary matters, "but what has nervousness to do with the subject unless it be applicable to this council, seeing that they suffer from the pressure of a "sealed order?" This was certainly a very shrewd remark for the unsanitary condition of the town of Drogheda at the present time, according to its Medical Officer's report, is very bad indeed. The filth to be met with in the town being little short of repulsive. Where the public sewers are worse than useless sanitary rhymes will hardly mend matters, though a sealed order may expedite their improvement. The sanitary poet of the Local Government Board is great upon bogs and quagmires, and he would seem to have some experience of peat or turf cutting in the sister island, or he could never picture them with such an amount of pathos:—

"'Mid our bogs and our mountains whoever has stood
On the dangerous brink of a quagmire of mud,
Has observed how his step caused the quagmire to shake
Throughout its whole mass, with a tremulous quake."

This is what Burke would not call sublime. If these verses were printed at the public expense, as some urban and rural sanitary authorities believed, they had a clear right to see them set to music. Indeed, this omission on the part of the Local Government Board in Ireland was pointed out by an acute town councillor. Another specimen, and we will end our quotations. The sanitary poet in Dublin seems to read a little of Darwin and Professor Huxley, for he tells us:—

"Man eats grain, roots, and herbs like an ox or a hog;
Feeds on fruits like a bird, devours flesh like a dog;
And so takes from the soil what nutrition he wants
Indirectly through brutes or directly from plants."

After this the "survival of the fittest" is certain, but we doubt if the reputed Local Government Sanitary poet has taken the amount of nutrition he wanted,—a mother's breast, or indirectly through the mouth-piece of a feeding-bottle.

Apart from our present rhymester, there is room for the mission of a sanitary poet, though not in the character of a public functionary, but a cultivated mind, who, in addition to his poetic motives, can bring to the task high artistic knowledge and sound scientific attainments.

DOCK CONSTRUCTION.

THE INSTITUTION OF CIVIL ENGINEERS.

At the ordinary meeting of the session held on the 23rd of March, Mr. Thos. E. Harrison, president, in the chair, a paper on "The Construction of the Albert Dock at Kingston-upon-Hull," by Mr. John Clarke Hawkshaw, C.E., was read. In the year 1861 the Hull Dock Company obtained an Act to construct a dock on the foreshore and lands adjoining and to the westward of the Humber Dock Basin. Further Acts were obtained in the years 1866 and 1867, after the works for the new dock had been begun, for increasing its size, and for the purchase of more land along the foreshore to the westward. The author described the site now occupied by the dock as it existed before the works were commenced, and also the strata underlying it, as disclosed by borings and by the excavations for the dock. The strata consisted of a bed of peat, beneath which were two layers of boulder clay, separated by a bed of fine sand. The lower stratum of boulder clay rested on sand, beneath which was the chalk at a depth of about 120 ft. below quay level. The dock was upwards of 23 acres in extent, 3,350 feet long, and from 200 ft. to 430 ft. wide; the height of the quay above the bottom of the dock was 35 ft. 3 in. The lock was 320 ft. long between the sills, and 80 ft. wide, with a depth of water of 27 ft. 3 in. on the sill at H.W.O.S.T. The total area occupied by the dock, lock, basin, and quays was 76 acres, and there remained 120 acres of foreshore, the property of the Dock Company, for future extensions. The author described the method of carrying out the works, and the various cofferdams and embankments constructed during their progress. The dock walls were of Bramley Fall stone throughout. An account was given of a "blow" which occurred in one of the foundations, and which caused the river-bank to give way, and flooded part of the works. The greater portion of the paper was devoted to a description of the method of forming the foundations for the lock, and of the difficulties which arose owing to springs. The author showed that these springs had their source in the lower bed of sand, and that the water from them found its way through old bore-holes in the bed of clay below the foundation. After contending with these springs for some months, it was found necessary to move the sills to the westward of the site first selected. The springs occurred under the east sill. During the whole of the time they were flowing, the ground continued to subside, owing to the large quantity of sand brought up from beneath the lower bed of clay. As the lockpit was separated from the Humber on two sides by banks, and on the third by a cofferdam, there was a continual risk, while the subsidence lasted, that one or other of these might fail. A very slight settlement had taken

place in the invert built on the abandoned site for the east sill, after the walls were finished and backed up, but no further settlement had since occurred, nor had the levels appreciably altered up to the present time. The gates were of wrought iron, constructed by Messrs. Sir W. G. Armstrong & Co.

EFFECT OF COLD.

A REPORT in your contemporary, the *Illustrated London News*, current number, deserves a passing notice in the columns of the *Builder*. The large elephant in the Zoological Gardens at Hamburg has recently died. It appears that some year and a half ago the wooden floor of the house in which the animal was kept was removed, and a stone floor substituted, since which time the elephant has refused to lie down, and its rest has therefore been taken standing. Its health some time ago began to fail, and its food was refused, and the animal fell down to the floor from exhaustion, and was unable to rise. Help was obtained, and the animal was raised by main force, and a strap left around its neck, which during the night mercifully put an end to its sufferings by strangulation. I hope the long-continued misery of this poor beast will be a lesson to everybody who has to do with animals kept in confinement, and that no one will ever construct floors of materials which have not a direct vegetable origin. This poor thing died of cold feet. Some years ago metal mousetraps were very popular with housekeepers. I had one, and I invariably found that if a mouse was caught in the evening or early in the night, it was dead in the morning. Such a thing never happened in a wooden trap, and the inference is that the animals died from loss of heat by the conduction of the metal trap. The same thing occurs in dwelling-houses in which the floors of the living-rooms are paved with stone or brick, and left uncovered with carpet or matting. Oil-cloth also produces similar results. Asphalte, too, is believed to have a good deal to answer for in bad health and even deaths, which have taken place within my own knowledge amongst those who have been compelled to stand upon it for long together. E. GRIMES.

PERVIOUS OR IMPERVIOUS.

SIR,—In the *Builder* of the 20th ult. you were good enough to allow me to say, *inter alia*, that any information which tended in the direction of a brick being produced which should be impervious to moisture, would be useful. I see by last week's *Builder* that it need not be so, some inquirers even preferring a porous to a non-absorbing brick.

I know numerous architects, both in London and the country, who have been always demanding a non-porous brick for face-work, and should be somewhat confounded to find that hereafter porous bricks only would be appreciated.

If you would kindly allow space, much useful information might be collected by some of your numerous readers saying what is their experience of the different classes of bricks used for front-work.

White bricks from the northern coal-field, Stourbridge, Leicester, Staffordshire, Bridgewater, Dorset, Devon, Cornwall.

Red bricks, from the various districts where they are made, too numerous to mention.

Glazed bricks, blue Staffordshire, Cleveland slag, and the cement or concrete bricks of Pillgwenlly, Newport.

Not to architects and builders alone would the information which might thus be collected be instructive, but also to persons who, like myself, being manufacturers, are desirous of producing not only what will meet the market, but what will also best accomplish its designed purpose. FELDSPAR.

Opening of the New Operetta House, Kilmarnock. — The new Operetta House, erected in John Finnie-street, Kilmarnock, by a Limited Liability Company of local gentlemen, was opened on the 22nd ult., under the management of Messrs. Glover & Francis, of the Glasgow Theatre Royal. The Operetta-house is in the Italian style of architecture, and has a frontage of 100 ft. in John-Finnie-street, where are the principal entrances. The theatre is seated for 1,050 persons, the opening of the proscenium is 22 ft. across, the stage is 40 ft. deep, and the breadth between its walls is 55 ft. The height from the floor to the ceiling is 63 ft.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

AT a meeting of the Liverpool Architectural and Archæological Society, held last week, at the Royal Institution, the president (Mr. Joseph Boult) in the chair,

Mr. Edward A. Heffer exhibited and explained his design for a cathedral suitable for Liverpool, and in doing so observed that the design had not been prepared by him in consequence of the recent agitation with respect to a bishopric, but had been commenced two years ago, his idea at that time being to substitute a suitable structure for the present St. Peter's Church, which he had long regarded as a disgrace to and a blot upon the town.

Mr. J. A. Forrest, in offering some criticisms, as an associate, upon the design of Mr. Heffer, suggested that St. Peter's was not the proper site for a cathedral. Why not place it, he asked, alongside the Art Gallery at the foot of Islington, and thereby make Lime-street one of the finest squares in the kingdom?

Several other gentlemen offered some remarks, and one gentleman spoke warmly in favour of the Classical style of architecture adopted by Mr. Heffer. The Gothic style, he said, had been ridden to death, and a change would be a positive relief. The President also disapproved of the site, but said Mr. Heffer was not, he believed, wedded to it if he could procure a better. As regarded the style, the President remarked that it was one of his aversions, and he should prefer some other. It was not what he considered a pure style, and it was one which gave opportunities for dealing in shams and unsound architecture.

Mr. J. A. Forrest read a paper on "Roundel Glass, with some account of the direction that stained glass is taking with reference to decoration."

WAGES AND OUT-GO IN CALIFORNIA.

IN reply to a request by Mr. D. Chadwick, M.P., the *Resources of California* for March gives particulars of the remuneration obtainable by various professions and trades. We extract such of the headings as may more particularly interest some of our readers:—

Architects work as usual, either by special rate or by commission. The supply so fully equals the demand that their commissions or compensations but little exceed the ruling rates in the larger eastern cities. The unprecedented activity in building, in which San Francisco has fast surpassed herself, even during the last six months, has correspondingly increased the fees and wages of all artisans concerned in the erection, completion, and furnishing of public or private buildings.

Artists are finding increased appreciation, and obtaining proportionally better prices. Diversities of talent, genius, or reputation cause such an almost endless variety of reward that one can hardly venture on even an approximate statement of average compensation. Painters of landscape, marine views, theatrical scenery, panel work, &c., are in full force, and possess an unusual aggregate of talent. Re-touchers and colourers of photographs obtain from $3 to $15 a day. Skilled workers in water-colours command fully as much.

Blacksmiths readily command from $3 to $4 a day, and generally work ten hours a day. In the mines they receive an average of $60 a month, without board. Foremen get from one-fifth to one-fourth more.

Cabinet Makers average $4 a day. More than half of those employed in the city work by the piece, in which, of course, their earnings depend directly upon their own skill and despatch.

Carpenters. — House-carpenters command $3 50c.; foremen, from $4 50c. to $6. Ship-carpenters or joiners, $4 50c.; foremen, from $5 to $7 50c.

Carvers in wood easily command $3 50c. a day; when they work by the piece and upon fine work, some make as high as $7 50c. or even $8.

Foundrymen.—Workers in iron command from $3 75c. to $4. Some extra skilful moulders get $5; core-makers, $3 50c. to $4; stove-mounters, $3 to $3 50c. Workers in brass, cupola, or furnace tenders, $3 for eleven hours; moulders, $3 to $3 50c. for ten hours; and finishers, $3 for ten hours.

Gasfitters.—From $30 to $50 a month and found. Generally work nine hours a day in the shop.

Gilders.—$3 50c. to $5, rising, in rare cases, to $7 50c.

Glaziers.—$2 to $3 50c. a day; occasionally $4. Usually rank with painters.

Painters. — Carriage-painters, $4; house-painters, $3 50c.; ship-painters, $3; and sign or ornamental painters from $5 to $15. Plain lettering brings 12½ cents. a foot; gold lettering on glass, $1 a foot.

Paperhangers.—Commonly work by the job; when paid by the day, they rank with house-painters, and get the same wages, $3 50c.

Plasterers.—Generally rank with masons, and command $4 50c. a day.

Plumbers.—$4 to $4 50c. for nine hours, though ten hours is fast becoming the standard, as it is, generally, in most mechanical or industrial pursuits.

Board for common labouring men costs from $3 50c. to $5 a week. For cleaner occupations and average genteel quarters, the usual charge is from $5 to $7 50c. a week. Those who wish more room, more "style," &c., can gratify themselves at from $10 to $16 a week. Good board and lodging, at first-class hotels can be regularly had for $15 a week, and from that to $20 or $25. Two occupying the same room, about 20 per cent. less.

Rent.—Small tenement houses, containing four rooms, of the lower kind, situated in blocks bring from $3 50c. to $5 a week. Of the better class, or under separate roofs, a house of four main rooms—kitchen, sitting-room, and two bedrooms—with usual closets, pantry, and sink-room, may be had for from $5 to $7 50c. a week; in the suburbs of the cities, or in the country, generally, larger and better accommodations may be had for the same money, or equally good ones for less.

WORKING MEN'S COLLEGE, GREAT ORMOND STREET.

THE summer session of this College will commence on April 5th. It will be remembered that this college was founded by the Rev. F. D. Maurice, in order to place a liberal education within the reach of working men, and to provide a centre for social intercourse between them and men of University training.

The subjects in which classes will be formed during the session are drawing (nude and draped model, antique and still life, casts, and natural objects), vocal music, English grammar, literature, French, German, Latin, Greek, arithmetic and algebra, physiology and botany, with classes in elementary subjects.

The general meeting of the council, teachers, and students, to which intending students and the public are invited, will be held on the opening evening, Monday, April 5th, when Dr. George Macdonald will address the meeting, and the principal, Mr. Thomas Hughes, Q.C., will preside

PROPOSED NEW BOARD SCHOOLS IN THE ROCHDALE ROAD DISTRICT.

THE Manchester School Board having decided on erecting schools to accommodate 900 children in Abbott-street, Rochdale-road, invited the three Manchester firms who are at present erecting school buildings for the Board in Ardwick, Ancoats, and Hulme, to submit designs for the proposed new edifice. According to the Manchester *News*, the drawings were sent in on the 18th of February, and, at the general Board meeting, the designs submitted by Mr. William Dawes, of 100, King-street, obtained the first premium, and the works will be carried out under his directions. Messrs. Medland & Henry Taylor received the second premium, and Messrs. Royle & Bennett the third. These schools will cost nearly 5,000*l.*, the limit being 5*l.* 10*s.* per child.

Rumsey Testimonial Fund.—A meeting of medical men and others was held at the General Registry Office, Somerset House, under the presidency of Dr. W. Farr, for the purpose of furthering a proposal to present Dr. Henry W. Rumsey with a substantial token of the estimation in which he is held by the profession generally. Dr. Rumsey, who was recently stricken with paralysis, has worked hard in the cause of sanitary progress, and deserves well of his country. Resolutions were passed and preliminaries arranged for an immediate appeal for funds.

ACTION BY A SURVEYOR.

HOWELL *v.* HUNT.

THIS was a claim at the Westminster County Court for 5*l.*, balance of account for work done by a surveyor.

Plaintiff said he was a surveyor, having offices at 45, Albert-terrace, and had been employed by the defendant, who had had a disagreement with the builder of Stanstead House, Hampshire, about some work which he had done there, in June last, to go there and measure the work done. Went over the work with the foreman, and prepared an account, by defendant's direction, which took him a couple of days extra. Was afterwards witness in an action brought by defendant against the builder, and received 1*l.* on his subpœna. There was an objection made to the quality of the work done by the builder. Witness had only charged defendant 1½ per cent., instead of the usual 2½.

Defendant said he did not look upon plaintiff as a surveyor, and did not employ him as such. Had known him for some years as a sort of clerk to Messrs. King & Sons, the builders, and as such he had asked him, as he was going with his family on an excursion to Southampton, to look over the work, and give his opinion of it. He also took exception to some of the items in the bill, and amongst others to 6*s.* for cab hire.

Plaintiff (in reply to the Judge, Mr. F. Bayley) said he had been in business as a surveyor for about eight years.

The Judge said plaintiff was clearly entitled to be paid for his labour, but he should give judgment for 4*l.* only.

SUB-CONTRACTORS' LIABILITY.

PATTERSON *v.* RIDSDALE.

IN this case at the Manchester Spring Assizes, before Mr. Baron Pollock, and a special jury, the plaintiff, an artist of Pendleton, Lancashire, sought to recover 100*l.* damages, as compensation for the demolition of a studio, caused by the carelessness of the builders, Messrs. Neill & Sons in taking down an adjacent building belonging to the defendant.

It was not denied that the damage arose through the builders engaged on the demolition, but the defendant's Counsel contended that his client was not liable, nor were Messrs. McNeill, with whom the defendant contracted, for the contractors had sub-let the work to a man named Williams, and that person was the party who should have been sued.

In support of this, the defendant and other witnesses were examined, and a written sub-contract with Williams was put in, by which Williams bound himself to make good, amongst other conditions, any loss or injury to adjoining property arising from accident or negligence.

Counsel for the plaintiff impugned the validity of this sub-contract, and contended that it had been concocted for the purpose of depriving the plaintiff of compensation. If his client had sued Williams, the latter would have fallen back on some other sub-contractors under him, Messrs. Kelly, Flannigan, and Mike, the men who pulled the premises down, and they, if worth powder and shot, would have referred the plaintiff to parties carting the *débris* away.

The Judge left it to the jury to say whether the sub-contract was *bonâ fide* or got up to save liability, and the jury found for the defendant.

DAMAGES FOR NEGLECT.

CORNELIUS *v.* EGLINTON.

THIS was an action in Westminster County Court (before Mr. Francis Bayley, judge) brought by the proprietor of restaurant and wine stores in New Oxford-street against a plumber in Crown-street, Soho, to recover 5*l.* 5*s.* as compensation for damages caused through defendant's neglect in not completing work which he had undertaken.

Plaintiff said, on the 21st of January there was a leakage from a water-pipe, which supplied a sink used for washing the glasses in the bar, and as defendant was at work at a house opposite, he sent for him to come and repair the damage. In the meantime the porter had bent up the pipe above the leak, and stopped it. Defendant came and inspected it, and said he would call the next day. He did so, when he said, as the cistern was full witness must let the water run off through the waste-pipe after business hours, and he would call in the morning. He then took the tap away. Defendant did not keep his promise, and the water worked its way through the pipe, flooding the bar, and penetrating through the kitchen ceiling, in such a way that the cooks could not work.

The Judge said there appeared to be a clear case of wilful neglect on the part of the defendant, but as no proof had been given of the precise amount of damage done, he should assess it at 3*l.*, with costs.

MODELLERS *v.* POTTERS.

AT the last sittings of the County Court of Wandsworth, an artist and modeller, of the name of Ross, sued Messrs. Sharpe, the well-known tile and fancy potters, of Nine Elms-lane, Battersea, for 3*l.* 6*s.* 8*d.*, balance of account for four models he had made for the firm.

Mr. Davis, manager to the defendants, explained to the court that he appeared for Messrs. Sharpe, and that they had no desire whatever to repudiate the claim if it were reconcileable with justice. Mr. Ross had been employed by the firm to carry out certain modelling work at the wage of 2*l.* per week. After working about nine weeks Mr. Ross left them, when he asked if they would purchase of him the models now in dispute, leaving the value to the generosity of Messrs. Sharpe, and witness gave him 3*l.* at first, and afterwards another 1*l.*, making 4*l.* in all. The models, in fact, were not worth the money paid for them. He was employed eight days at the factory, to complete the models but the plaintiff was paid for that in his wages. Witness was quite willing to return Mr. Ross the models, for all the use they were to his firm.

Mr. Ross said he would accept the return offered, on condition that Mr. Davis would promise that no advantage should be taken of the copyright by the firm.

Mr. Davis assured the plaintiff that Messrs. Sharpe had no intention of doing anything of the sort. They did not want the models or their copyright.

The judge (Stonor) said it was an honourable understanding on both sides, and in order that the plaintiff might receive back his hearing-fee, 2*s.*, he should order the case to be struck out of the list of causes.

Judgment for both sides accordingly.

PURCHASE OF THE CRYSTAL PALACE.

SIR,—It is very important that the 7,000 shareholders of the Crystal Palace, whose interests we represent, should be informed of the success which has attended our exertions to promote their interests.

I therefore communicate at once to you the fact that we have concluded the terms of an agreement, by which their property is to be purchased, for a new association, at a considerable increase on its present market value,—that the financial contractors are prepared to deposit a security of 100,000*l.* for the execution of the contract, and that this has been done in the very terms demanded by the Court of Inquiry; who will doubtless immediately issue their report and submit it to the shareholders for their acceptance. FRANCIS WAKEFIELD,

Chairman of the Restoration Committee.

THE NEW ACT-DROP AT THE COURT THEATRE.

SIR,—The act-drop in question is very well painted, but I think it is a mistake.

A drop-scene may be either treated as a picture, a "scene," in the usual sense of the word, or as a decorative curtain. The one at the "Court" is neither; it is a realistic representation of a smaller proscenium-opening with its curtain within the real proscenium-opening, and flanked by two remarkably real-looking polished granite pilasters, quite a triumph of ocular deception. The illusion is so well carried out, helped by the sentinel figure in front, that you almost wait to see the mimic curtain draw up. But when, instead of that, the massive architectural framework curls itself up and disappears, curtain, sentinel, and all, the eye receives a disagreeable shock, and resents the deception.

If a drop is not made a regular scene, it should be treated frankly as a curtain, which, I think is much to be preferred; only it is susceptible of something much better than the vulgar festoon and tassel business which is the usual thing in such cases. It might be a good idea, too, to have drop-curtains in sets to mark the conclusions of Acts I., II., III., &c., respectively. There is something more to be done with this theatrical appendage, but I do not think the effort made at the "Court" is at all in the right direction, clever as it is in execution.

H. H. S.

*** Our correspondent is well entitled to have his opinion, though we may not wholly agree with it. The act-drop in question, to which we have already referred, is to all intents and purposes a picture, and a very effective picture too; and when it curls itself up and disappears, we see no more reason to resent the deception than when an assemblage of Venetian palaces in like manner bend themselves to circumstances, or the cloud-capped Alps, majestic and serene, are suddenly twirled into a higher empyrean.

CHURCH BUILDING NEWS.

Rodmersham.—At a vestry meeting held in the parish church of St. Nicholas, Rodmersham, recently, it was decided to restore the church. The Rev. W. J. Mellor, the vicar, drew the attention of the meeting to the plans and specifications drawn up by Mr. Slingsby Stallwood, architect, of Folkestone. The restoration would comprise amongst other things, new roofs to the chancel and two side aisles, the building of a vestry and organ-chamber, repaving and reseating the church with open benches, a new hot-water heating apparatus, the renewal of the tracery of most of the windows, and the rebuilding of certain portions of the arches and walls, which were crumbling away, &c. The total cost would amount to about 2,300*l.* It was also agreed that as soon as sufficient funds were collected the chancel should be restored, the body of the church drained and repaved, the present pews removed, and the church reseated temporarily with chairs, until the committee can afford to put in open benches.

Meopham (Kent).—During the last three years Mrs. Barnett, of Meopham Court, has been carrying out a series of improvements in the chancel of Meopham Church, as a memorial to to her late husband. The first work has been the rebuilding with new stone of the east window, and filling it with stained glass, Messrs. Lavers & Barraud being the artists. The next work was a new reredos, consisting of a centre of three canopied arches of white carved and diapered stone. In the centre panel is a Greek cross of red marble and alabaster, the centre and extreme ends being formed of circular pieces of spar of various colours. In the side panels are groups of corn and grapes, respectively carved in stone. The three panels are separated and flanked by red marble pillars. Right and left of these are four arched panels, separated by green marble pillars, and containing, on a ground of alabaster, the "Lord's Prayer," the "Apostles' Creed," and the "Decalogue," in readable letters. Below these panels the stonework is diapered, as is also that of the north and south walls. The work of the reredos was executed by Messrs. Farmer & Brindley, of London. The space also within the Communion-rails has been repaved with encaustic tiles, by Messrs. Minton, Hollins, & Co. In the centre, leading from the railing to the Communion-table, has been placed a tombstone of Mediæval date. All the other tombstones taken from the chancel have been placed at the west end of the church, around the font, where, together with others which had been placed there when the church was restored, they are now to be seen classified according to family relationship. At the east end of the south aisle of the church has also been placed a stained glass window, to the memory of Edith, wife of Lieut. Edwards, R.E., Messrs. Hardman & Co. being the artists.

Scole.—This church, having become dilapidated, has lately been restored and partly rebuilt. The nave roof, which was decayed, has been made good, and the chancel, which had a flat plaster ceiling cutting across the middle of the chancel arch, has been covered with a new roof. The eastern window, of three lights, with the eastern gable, cross, &c., are all new, as well as the chancel door and the tracery of the side windows of the chancel. A new vestry has also been added on the north side of the chancel. The windows of the nave and aisle, as well as all the other stonework, have been restored, the old stonework being retained where possible. The south porch has been removed, and a new one substituted. The font has been restored, fresh lined with lead, and set upon a stone step near the south door. The old seating and west gallery have been cleared away, and the tower arch and west window opened to view. The new seating consists of open benches of pine, with sloping backs. The pulpit is of oak, with open tracery panels; and the reading-desk is composed out of a fifteenth-century lectern. The floor of the chancel is paved with Godwin's tiles, and the windows are glazed with cathedral glass in two tints. The church is heated by one of Porritt's underground stoves. The work has been carried out under the superintendence of Mr. James K. Colling, of London, architect, by Messrs. Vine & Day, of Eye, builders.

Old Swan.—The new church dedicated to All Saints, and situated in the Broad-green-road, Old Swan, has been consecrated by the Bishop of Chester. The church is intended to accommodate about 800 worshippers, and half the seats will be free. The total cost has been about 3,700*l.*, the builder being Mr. Thomas Bridge, Burscough, and the architects Messrs. C. D. Barry & Son, of Church-street. The style is Early Decorated, and the interior consists of a nave, side aisles, and transepts. The seats are all open, and the whole of the fittings are of pitch pine, varnished. The foundation-stone of the church was laid in the early part of 1871.

Litchfield.—The parish church, which had been closed for eight months for the purpose of undergoing repairs and improvements, has been reopened. Parts of the church are nearly 800 years old. The building had been allowed to fall into such a state of decay, that a thorough restoration was required. This has now been carried out under the superintendence of Mr. H. Woodyer, architect, of Grafham, near Guildford, at the cost of about 1,000*l.* The flint walls have been stripped and pointed, a new porch built of flints with Bath stone dressings, has been added, and a shingled spire. Internally, the unsightly ceilings have been removed, and the timbers of the roof, most of which were in good condition, have been opened out to view. The church has been reseated throughout, and paved with Minton's encaustic tiles. The chancel has been separated from the nave by an oak screen, the fittings of the chancel, which are all new, being

of the same material. The reredos is composed of Bath stone and red Devon marble, the centre panel being ornamented with a white marble cross. The old font bowl has been cleaned and restored, and a new base added to it. A new stone pulpit has also been provided. The church will now accommodate about eighty persons.

Liverpool.—The Chairman of the Works Committee of the Mersey and Docks Board has laid the foundation-stone of St. Aidan's Church, in Latham-street, Stanley-road, Kirkdale. The original church of St. Aidan, in Victoria-road, being in the way of the north dock extension, is to be removed and rebuilt on the Latham-street site. The new building will be nearly an exact counterpart of the old one.

Leicester.—St. Saviour's Church, the gift of the Rev. F. G. Burnaby, is beginning to assume a tangible form. The plans were prepared some time ago by Sir George Gilbert Scott, R.A., and Messrs. Osborne, Brothers, High-cross-street, Leicester, the contractors and builders, have commenced operations, but these have been much impeded by the state of the weather. The foundations have been dug, and the building has been commenced, and will be proceeded with as rapidly as possible. It is expected that the memorial stone will be laid in the course of a few months. The style of the edifice will be Early English, and will be composed almost entirely of brick, stone being used as sparingly as possible. The contract is about 11,000*l.*, and the building will be capable of accommodating 900 persons. Mr. G. W. Wood is clerk of the works.

York.—The foundation-stone of the new Church of St. Maurice, on the site of the old edifice, is about to be laid. The nave will be 72 ft. in length from the west end to the chancel arch, and 24 ft. in width. The north side aisle will be 12 ft. by 72 ft. in length; and the other aisle, whilst of the same width as the latter, will be 58 ft. long; the basement of the tower being 14 ft. by 12 ft. The chancel will be 38 ft. by 22 ft., and there will be a transept 14 ft. square. In a nearly corresponding space on the opposite side will stand the organ, behind it being a vestry 20 ft. by 15 ft. The sittings will be, for adults, 459; and for children, 144. The seating will be of pitch pine, and the fittings of the same wood, varnished. The height of the nave will be 35 ft. from the floor to the wall-plate, and 52 ft. to the ridge; the chancel 28 ft. and 44 feet; and the transept 23 ft. and 34 ft. respectively. The roofs will be open-timbered with curved braces, and hammer-beams resting on carved stone corbels. The window arches and jambs will be of stone; and the pillars of the nave will be of red Mansfield stone. All the caps of the pillars will be of stone, from the Huddlestone quarries, and carved. The floors of the aisle will be of ornamental tiles, that of the chancel of encaustic tiles. The east and west ends will contain five-light windows; the clearstory, three-light windows; the transept, windows with a like number of lights to the latter; and the aisles, two-light windows. The height of the tower will be 90 ft. to the top of the pinnacles. The church will be faced with Bradford stone, and have Whitby stone dressings. The tenders have been let as follow:—Mr. Joseph Clark, excavator, bricklayer, and mason; Mr. William Rookledge, carpenter and joiner; Mr. Francis Rawling, plasterer; Mr. James Knowles, plumber and glazier; Messrs. W. & J. Dodgson, slaters; and Mr. Robert Pearson, painter and stainer. The amount of the tenders is 5,425*l.* 19*s.* The architects are Messrs. Gould & Fisher, of York.

Sutton Valence.—The parish church of Sutton Valence has been re-opened, after restoration. The interior of the church, which formerly consisted of a chancel and a large open body, with old-fashioned pews, has been re-modelled. The gallery at the side has been removed, and its place taken by a convenient structure at the west end. Nave and aisles have been formed, with modern pillars and arches; a new floor has been laid down, and open, stained seats substituted for the high-backed ones. The west end of the church has been taken out, the window and belfry thrown up; the roof has been fresh timbered and made secure, the ceiling whitewashed, and the walls coloured throughout. There are a new window in the south side, and two new chancel windows. The chancel roof has been raised, a new ceiling put in, the walls fresh plastered, a tesselated floor laid down, and seats erected for the choir. The restoration has cost about 2,000*l.* Mr. Gordon Hills, of London, was the architect, whose plans have been carried out by Mr. J. G. Naylar, contractor, of Rochester.

Books Received.

Economic Geology; or, Geology in its Relations to the Arts and Manufactures. By David Page, LL.D. W. Blackwood & Sons, Edinburgh and London.

There is much in this book which deserves, indeed demands, the attention of many of our readers: the headings of some of the chapters will almost serve to prove it,—"Geology and Land Valuation," "Geology and Architecture," "Geology and Civil Engineering," "Refractory or Fire-Resisting Substances," and so on. A few sentences from it on the subject of Materials for Piers and Sea-Walls will serve to show the style of the book:—

"As to choice of material for piers, breakwaters, sea-walls, and lighthouses, much will depend on the geology of the district; that is, whether limestones, sandstones, greenstones, granites, or other sufficiently hard rocks, lie conveniently adjacent. While Aberdeen can avail herself of her granites, Dundee has recourse to the tough grey sandstones of the Old Red, Leith and Glasgow to the quartzose grits of the neighbourhood, the Clyde to greenstones, Plymouth to limestones, Liverpool to granites brought from a distance, and the Tyne and other ports to artificial blocks of concrete. In all cases, hardness, toughness, weight, and durability are the main requisites, considering the bumping and friction in docks and harbours, and the impact of waves and breakers on exposed sea-walls and breakwaters, where the blocks lose so much of their weight from being submerged in water. We have witnessed the effect of storms on sea-works at Wick, Lossiemouth, Anstruther, Granton, and Tynemouth, and their power of displacement and transport would seem incredible, were it not remembered that stones of ordinary specific gravity lose about a third of their weight in water, while the effective impact of waves occasionally amounts to 6,000 lb. per square foot. Whatever may form the main mass of masonry, there is no rock so suitable for facings, copings, and gateways as a good medium-grained granite, which possesses at once hardness, toughness, and weight. Next in order are the silicious grits and sandstones, which, though not so hard nor heavy as the granites, still stand well, and can be raised in blocks of almost any size, like those used at the Dundee Docks, the Albert Dock at Leith, and on the storm-walls of the Tynemouth piers. The limestone (compact dolomites and marbles) come next; but the greenstones and basalts are generally too brittle, and from their columnar or sub-columnar structure can rarely be raised in blocks of sufficient magnitude."

It is obvious that in all the works adverted to under the present section,—piers, breakwaters, sea-walls, and lighthouses,—security of foundation, great strength, and durability of material, are the main essentials; and the architect or engineer well acquainted with the geology of the district and with the characters of the various rocks will be in a much better position to do justice to the undertaking than one who, however mechanically ingenious, is incapable of forming an estimate of these particulars. Nor is it rocks alone upon which he will be called to decide, but mortars, hydraulic cements, concretes, puddlings, and the like, all of which require some knowledge of rocks and minerals, and the methods of rendering them economically advantageous.

VARIORUM.

A Letter to the Rev. T. E. Bridgett on the "Character and Sphere of Ecclesiastical Antiquities," by Alexander Wood, M.A. (London: Burns & Oates), is an elaborate reply to a criticism in the *Saturday Review* on a work of his, "Ecclesiastical Antiquities of London and its Suburbs." It is scarcely to be expected that the public will find this *brochure* so interesting as the writer does.——"Three Months after Date," by M. Laing Meeson (Ward, Lock, & Tyler), consists of a number of stories exposing the doings of money-lenders, joint-stock company swindling, and such like. Their general correctness was strikingly shown during a recent trial for libel against the *World*. The reports of the examinations read as if they had been copied from this book, page after page. Young men entering business will be all the better after amusing themselves for an hour or two with "Three Months after Date."——Mrs. G. Linnæus Banks, in the interesting story now running through *Cassell's Family Magazine*, "The Manchester Man," is following the plan she adopted so successfully in her novel, "God's Providence House," connecting its various incidents with the parts of the town wherein they are supposed to occur.

The Liverpool School Board.—Mr. T. Mellard Reade, C.E. of Liverpool, has been appointed architect to the Liverpool School Board, in accordance with the terms published by us some time since. It is we understand the intention of the Board to erect schools for 1,000 children in Walton-lane, and Mr. Reade is preparing plans of the same.

Miscellanea.

Neglecting to take down Dangerous Houses.—At the South Shields police-court, Mary S. Robson, Elizabeth Anderson, Alexander M'Dermaid, Margaret Grey, and Joseph Worthington, were summoned by Mr. M. Hall, borough surveyor, for neglecting to take down two dwelling-houses in Hill-street, which the surveyor had deemed to be in a ruinous state. The defendants said that they considered that they had no right to take the houses down. Mr. Hall, borough surveyor, said that he had to apply for an order against the defendants to take down the two houses, on the ground that they were rendered dangerous by the action of the underground fire. The defendants, as the owners, had been served with the required orders. The defendants continued to deny their liability, and the borough surveyor said he was not in a position to prove that the defendants had received any rents for the property; Mr. Hall further stated that, in the event of an owner not being found or proved, he had power to pull down the houses. In reply to the bench the defendants stated they had no objection to the houses being pulled down. The houses it appeared, were mortgaged, and they had no interest in the property. The court, under these circumstances, declined to make any order upon the defendants, and dismissed the case.——Messrs. John Barras & Co., Gateshead, were summoned by Mr. M. Hall, borough surveyor, for neglecting to take down a dwelling-house in Price-street. Mr. Hall said the house was in a dilapidated and dangerous condition, and he had to apply for an order for its being pulled down. The bench made an order for the pulling down of the house.

"Hazardous Rates" of Insurance.—Mr. H. Brooks writes to protest against the rate of premiums charged on hazardous trades in this country compared with similar risks abroad. He more particularly alludes to the advanced rate levied on pianoforte manufacturers and branches connected therewith, who are seeking a remedy by which they can best obtain full security against fire on economical terms. Some years ago he paid only 5*s.* per cent. on a portion of his stock and utensils in trade, which rate has been increased in proportion as business extended, until last year it reached 63*s.* per cent., since reduced to 52*s.* 6*d.*, through a considerable outlay to diminish the risk. The same property is insured in other offices at 42*s.* per cent., which he considers an unreasonable demand, as compared with 8*s.* per cent. charged in Paris on similar risks. Mr. Brooks thinks a disinterested surveyor might be appointed to fix the rate of premium on hazardous risks, who should be paid a percentage on the amounts insured. This, if adopted, would be more equitable and consistent than leaving it solely with the offices, as at present. If 8*s.* per cent., with a few centimes for neighbours' risks, is found remunerative in Paris, why should it not be in London? We agree with him that the offices should be memorialised through their committee for an immediate reduction in the rates. If they decline, they ought to publish statistics to prove their inability.

In the recent Dispute in the Birmingham Building Trade, the points of difference were nominally small. The bricklayers claimed from the employers an advance of a ½*d.* an hour; the labourers who assist the bricklayers wanted ½*d.* an hour extra; and the double concession would have made the rate of hourly pay of the former 8*d.*, of the latter, 5½*d.* One of the principal arguments both for and against the increase is, it appears, one that is always brought forward. The men, in support of their claims, adduced a list of towns in which the wages are higher than those paid in Birmingham; the masters, in opposing them, put in a list of places where the wages are lower. Mr. Kettle, in his award, points out that the lower wages are balanced by comparative advantages, the higher by comparative disadvantages; and he shows by admitted facts that Birmingham holds a sort of middle position in this matter. As the general result, his award declares that neither the bricklayers nor their labourers are entitled to a "rise."

Silicate Paints.—We understand that the Government of India has adopted the paints of the Liverpool Silicate Paint Company for the Queen's barracks at Fort William; and the Calcutta Waterworks Company have also decided in their favour, and sent large orders by this mail.

Artisans' Dwellings at Seacombe.—Last week a number of gentlemen interested in the improved construction of dwellings for the working classes assembled at the Shaftesbury Cottages, Wheatland-lane, Seacombe, to inspect those buildings, which have been recently erected on a new principle. Mr. Ellis, builder, Brighton-street, who is the patentee, claims to have secured certain advantages which are of some importance. He explained to the company the details of his plan, which comprises, amongst other *desiderata*, an improved central chimney and fireplace to each house, thus giving a better supply of air, preventing unhealthy draughts, and insuring economy of fuel; also some arrangements of ash-pits, &c. A separate entrance is given to each cottage, and, among other things, Mr. Ellis claims for the principle a great saving in the cost of street-making.

Explosion at St. Paul's Schools.—An alarming occurrence took place at St. Paul's New Schools, Doctors'-commons, last week. The building had been for some time past in course of erection, and was advanced towards completion. About one o'clock a flame suddenly burst through the window on the ground floor at the east end of the building, at the corner of Dean's-court. Immediately afterwards a loud report was heard, followed by the smashing of glass. The front of the building is in Carter-lane, and there the greatest damage was done. A number of warehouses near the schools lost their glass in the windows. The Swan with Two Necks Tavern, directly opposite, had the whole of the front blown in. Many houses suffered from concussion. A man named John Pettit, who was passing, had his hands burned badly, and a workman inside the building, named Louis Stonard, had his hand seriously cut with glass. An escape of gas is supposed to have been the cause of the explosion.

An Aerial Bridge.—A great engineering work is about to be executed at Lyons. It is an iron bridge to connect the plateau of Fourvières with that of the Croix-Rousse, which are two heights, like that of Montmartre in Paris, at a distance of 300 mètres from each other. This undertaking is estimated to cost 2,800,000 francs, of which a subvention of 600,000 francs only is asked from the city. This aërial bridge will consist of three spans, the central one resting on open iron columns in a line with the houses on the quays. The platform of the bridge will be 65 mètres above the road, and nearly 50 mètres above the houses. Each of the two central columns will have inside a lift by which pedestrians will be raised in two minutes.

The Nottingham School of Art.—Mr. J. Seddon Tyrer, of Mansfield, a student of this school, has just been successful in gaining an art master's certificate for painting and design. He had to pass a series of severe examinations at South Kensington Museum, on the History and Technical Processes of Art, Structural Botany, and the Principles and History of Ornamental Art. He gained marks for "excellence" and "good" in most of the papers. The Nottingham people believe that this is the first instance on record in which a student of any metropolitan or provincial school has gained this higher certificate, which fully qualifies the bearer to take the head-mastership of an important school of art.

Dangers of the Tram.—We witnessed another fall from a tram-car on Easter Monday. A lady was getting out, the car having stopped, and before she was off the step the car moved on and she fell in the road. The conductor, as usual in such cases, was on the top collecting his fares. As we have previously argued, the system of leaving the inside passengers without an attendant to assist them to alight or signal the driver when required to stop while the conductor is on the top, is fraught with much inconvenience and danger, and should be remedied.

Architectural Association of Ireland Prizes.—Two prizes of five guineas each are offered (open to any member of the profession under thirty years of age) for the best measured drawings of any building in Ireland or the United Kingdom up till the eighteenth century, and for the best design for a town church to accommodate 1,000 people. The president and vice-president are to be the referees. All works submitted for either of the above prizes must be delivered, carriage free, at the rooms of the Association, addressed to the hon. secretaries, on or before the 30th of September, 1875.

Engineering on the Danube.—The details of the works proposed to be executed for the removal of the semi-sunken ledge of rocks, known as "The Iron Gates," which stretch across the Danube below Orsova and impede the navigation of the river, have been laid before the Turkish Council of Ministers, and have received the approval of the Imperial Divan. The Governments nearly interested in this matter will shortly come to an understanding as to the execution of the works, which will take about two years to complete.

The Statue of Manin in Venice.—The inauguration of this statue took place on the 22nd ult. The monument is a full-length colossal statue in bronze upon a stone pedestal. There are steps leading to it, and on the top of these is the lion of St. Mark, also in bronze. The Dictator stands facing his house, with his right hand in the breast of his coat, his left hand hanging down at his side and holding a scroll. On the scroll are written in Italian the words "March 22, 1848;" on the pedestal the word "Manin." The lion has the wings of the lion referred to in the book of Revelation—the lion of St. Mark, and not a natural lion.

New Harbour at Madras.—A telegram has been received by the Madras Government from Lord Salisbury, conveying his lordship's sanction to Mr. Parkes's project for the construction of a harbour at Madras. Mr. Parkes, C.E., who superintended the construction of the Kurrachee harbour work, proposes to make a harbour off Madras by running out two piers 1,200 yards from the shore, at about 500 yards to the north and south respectively of the present screw pile pier, into seven fathoms of water, and connecting them by another pier or breakwater, in the middle of which would be the entrance 450 yards in width.

Cabmen's Shelters.—Permission has been obtained for the erection of a cabmen's shelter in Davies-street, Berkeley-square. Mr. Arthur Guest, formerly member for Poole, has joined the committee in St. James's-street, and has collected sufficient funds to defray the cost of a shelter, a requisition to erect which has been sent to the St. James's vestry, signed by 109 noblemen and gentlemen, members of various clubs in the neighbourhood. Nine shelters are being built, in addition to the three already opened. One has been set up at Knightsbridge.

Alterations in All Saints' Church, Derby. The following tenders have been received for the restoration of the interior of All Saints' Church, which involves a considerable addition to the available seats: — Mr. Wood, 2,955*l.*; Mr. Bridgart, 2,900*l.*; Mr. Edwin Thompson, 2,720*l.*, all of Derby; and Mr. Rowley, of Walsall, 2,600*l.* The tender of Mr. Thompson has been accepted by the committee. The work will be commenced before the end of April.

Earl Shrewsbury's Banquet-hall.—Vice-Chancellor Hall has refused to compel the Earl of Shrewsbury to demolish the new banquet-hall which he is erecting at the rear of his house in Dover-street, Piccadilly, to the detriment, it was proved, of the house of his neighbour, Lady Stanley of Alderley. His Honour thought the new building had gone too far for his interference, but he ordered an inquiry as to what damages her ladyship was entitled to.

Schools for the Jews.—The Jews are attending vigorously to the education of their children in London. They have just put up new Jewish schools in the borough, which are, in every respect, creditable. Mr. Lewis Solomon is the architect of the building. Mr. Solomon himself gives volunteer instruction in drawing on Sundays, which the Government accept as part of the regular curriculum.

New Town-hall, Hastings. — Amended instructions have been issued to architects in connexion with this proposed new structure. The cost of the building is not to exceed 18,000*l.*, exclusive of the foundations, for which a further sum of 2,000*l.* is allowed. The designs are to be sent in on or before April 22nd, and premiums of 100*l.*, 50*l.*, and 25*l.* respectively, are offered for three most approved designs, which are to become the property of the corporation.

Foundation Stone Laying at Glossop.—The foundation stone of new schools, which are estimated to cost over 1,000*l.*, and to accommodate 400 scholars, was laid in connexion with Mount Pleasant Congregational Church, Glossop, on Good Friday, by Mr. J. Sykes, of Huddersfield.

New Rectory, St. John's, Gloucester.—The parish of St. John has long been without a habitable parsonage-house. The rectory, a dilapidated tenement in London-road, known as Heathville Lodge, will forthwith give place to a substantial residence, the plans for which were a long while since prepared by Mr. A. W. Maberly, architect. The contract has been let to Mr. James Clutterbuck, of George-street.

Cæsar's Camp, Wimbledon Common, seems doomed. Some time ago half the enclosure was fenced in, and some of the trees which form its chief attractions were felled. Now a further and most important step has been taken, for during the past week workmen have been busily engaged getting out foundations for a house, and part of the surface ground has been broken up.

The Hildesheim Corona.—A cast of this interesting piece of early metal work has just been acquired by the South Kensington Museum. It represents the light-bearer of Hildesheim Cathedral, one of the finest specimens of its kind extant. Some descriptive particulars of this corona, and engraved illustrations, will be found in our volume for 1869 (xxvii.), pp. 687, 689.

Poole Workhouse.—The following tenders for erecting a chapel and day rooms at the workhouse have been received by the guardians:—Mr. T. J. Tilsed, 1,113*l.*; Mr. W. M. Morris, 694*l.* 15*s.*; Mr. J. Dunford, 680*l.*; Mr. F. Durke, 674*l.* On the proposition of Mr. E. C. Oakley, seconded by Mr. T. W. Green (vice-chairman), Mr. Dunford's tender was unanimously accepted.

Sale of the "Wounded Amazon."—The fine statue of "The Wounded Amazon," by Gibson, exhibited at the Great Exhibition of 1862, was knocked down for 610 guineas on Thursday at the sale of the Mendel collection at Manchester. The statuary sold during the day brought over 4,500*l.*, and the furniture of the drawing-rooms fetched 1,500*l.*

A New Naval College for Cadets.—Mr. Ward Hunt, Sir Massey Lopes, and Colonel Paisley arrived at Dartmouth on Monday evening, to inspect a site for a new naval college for cadets, to be built at Dartmouth. A spot on the top of the hill, comprising about twenty acres, overlooking the harbour and English Channel, was selected.

Church Extension in Leeds.—The foundation-stones of two new churches were laid in Leeds on Monday last by the Bishop of Ripon. They are to be built to the east of the town; one, St. Edmund's, in Providence-street, the Bank, in the parish of All Saints; and the other, St. Alban's, in Saville-green, York-road, in the parish of St. Stephen's.

Works at the British Museum.—The estimate of the grant to be required this year for the British Museum buildings is 9,538*l.*,—an increase of 4,393*l.* over last year. Almost the whole of this increase is in consequence of works and repairs, the erection of a new principal staircase, and the construction of additional exhibition-rooms costing this year 5,000*l.*, out of a total estimate of 20,000*l.*

Pawning Lead.—A Glasgow pawnbroker was ordered to pay a fine of two guineas or suffer thirty days' imprisonment, at the Central Police Court, Glasgow, last week, for purchasing a quantity of lead and failing to enter the transaction in his books. It turned out that the lead was stolen from the roof of a building belonging to the North British Railway Company.

New Masonic Hall.—The directors of the "Hackney Public Hall Company, Limited," have altered their title to the "Hackney Public and Masonic Hall Company, Limited," and propose to adapt the plans of the front portion of their building, now in course of erection, by Messrs. Jno. Waldram & Co., of Kingsland-road, for Masonic purposes.

Harrogate.—The Local Board having been defeated in the recent law-suits, has called in Mr. Bailey Denton, C.E., to advise upon the means to be adopted for connecting his plan of intermittent downward filtration with the sewage irrigation farm now in use there.

The Margate Aquarium.—The first stone of the Aquarium was laid on the 18th ult., in the presence of a large concourse of spectators, and amid loud cheering. Mr. Law, the engineer, broke a bottle of wine on the stone, and wished success to the undertaking.

Designs for St. Lawrence Church, Liverpool.—The designs of Messrs. T. E. Murray & G. H. Thomas, for the new church of St. Lawrence, Liverpool, have been accepted. The other competitors were Messrs. Sumner, Reeve, and Duckworth & Metcalf.

A Hundred New Houses at Swindon.—Messrs. Smith & Hinton, builders, of Chalford, have undertaken the erection of 100 houses, at Swindon, on the same plan as those known in Stroud as "Dorington-terrace."

Her Majesty's Opera is again at Drury-lane, pending the erection of the new House. Messrs. Bracher & Son are, as before, the builders, and have transformed the House into a handsome arena for operatic display.

Death of Mr. Prince.—The death has just been recorded of Mr. Henry Prince, of the Phœnix Foundry. He was intrusted with the casting of the statue for the Albert Memorial, which approaches completion.

River Pollution at Darlington.—Vice-Chancellor Hall has granted an injunction to restrain the corporation of Darlington from emptying the sewage of that town into the river Skerne.

Surveyor, Peterborough.—Mr. J. W. Walshaw, one of the chief assistants in the borough surveyor's office, Bradford, has been appointed borough surveyor of Peterborough. There were sixty-nine applications for the appointment.

School Board Appointment.—Mr. Trevail, of St. Blazey, Cornwall, has been appointed architect to St. Merryn School Board.

TENDERS

For new schools at Kinver, for the Kinver School Board. Mr. T. Smith, architect. Quantities by Messrs. T. C. & J. P. Sharp:—

Guest	£1,937 0 0
Flavel	1,840 0 0
Bennett	1,793 0 0
Chapman (accepted)	1,600 0 0

For new warehouses, &c., for Messrs. Grainger, Son, & Smith, Dudley. Mr. Smallman Smith, architect. Quantities by Messrs. T. C. & J. P. Sharp:—

Guest	£1,700 0 0
Nelson (accepted)	1,690 0 0

For new schools at Tividale, for the Rowley Regis School Board. Mr. J. T. Meredith, architect. Quantities by Messrs. T. C. & J. P. Sharp:—

Binnian & Son	£2,978 0 0
Matthews	2,967 0 0
Thompson	2,830 0 0
Hilton & Co.	2,800 0 0
Horsley Brothers	2,759 0 0
Holland & Sons	2,740 0 0
Stockton & Sons	2,724 0 0
Nelson (accepted)	2,590 0 0
Trow & Sons	2,584 0 0

For new schools at Cradley Heath, for the Rowley Regis School Board. Mr. J. T. Meredith, architect. Quantities by Messrs. T. C. & J. P. Sharp:—

Matthews	£4,535 0 0
Binnian & Sons	4,300 0 0
Horsley Brothers	4,263 0 0
Stockton & Sons	4,251 0 0
Holland & Sons	4,154 0 0
Thompson	4,000 0 0
Trow & Sons	3,970 0 0
Nelson	3,880 0 0
Hilton & Co. (accepted)	3,829 9 0

For new schools at Knowle, for the Rowley Regis School Board. Mr. J. T. Meredith, architect. Quantities supplied:—

Holland & Sons	£3,160 0 0
Stockton & Sons	3,051 0 0
Thompson	3,000 0 0
Nelson	2,940 0 0
Horsley Brothers	2,874 0 0
Matthews	2,862 0 0
Trow & Sons (accepted)	2,639 0 0

For the erection of a pair of villas at Dulwich, for Captain R. Turner. Mr. Richard Peters, architect:—

Simpson & Baker (accepted)	£2,030 0 0

For new vicarage, Aldborough, Suffolk. Mr. R. M. Phipson, architect:—

Luff	£1,530 0 0
Wright	1,479 0 0
Smith & Sons (accepted)	1,285 0 0

For new roof to Blo' Norton Church, Norfolk. Mr. R. M. Phipson, architect:—

Cornish	£400 0 0
Greenwood	329 0 0
Bishop & Son	310 0 0
Ludkin & Son (accepted)	287 0 0

For alterations to Great Dunham Rectory, Norfolk. Mr. R. M. Phipson, architect:—

Cornish	£1,772 10 0
Hubbard	1,475 0 0
Farrow	1,389 0 0
Bardell Brothers	1,377 0 0

For additions and repairs at The Firs, Mitcham, for Mr. B. Dann. Mr. W. C. Banks, architect:—

Larke	£992 0 0
Merritt & Ashby	859 0 0
Cooper (accepted)	832 0 0

For house at Wandsworth-common, for Mr. J. Chisman. Mr. Buxton, architect. Quantities supplied:—

Harris	£1,487 6 1
Hill, Higgs, & Co.	1,475 0 0
Lathey Brothers	1,390 0 0
Eborall	1,380 0 0

For stables, cottage, and warehouse, Willesden, for All Souls' College, Oxford. Mr. Robert Hutchinson, architect:—

Shapley	£3,036 0 0
Rhodes & Roberts	2,823 0 0
Stephenson	2,819 0 0
Tennant	2,716 0 0
Hook & Oldrey	2,600 0 0
Simpson & Baker	2,512 0 0
Kingsman	2,498 0 0
Burford	2,442 0 0
Wagner	2,398 0 0
Johnson	2,377 0 0
Ingram & Son	2,365 0 0
Smith	2,350 0 0
Handover	2,320 0 0
Cade	2,311 0 0
Warr	2,275 0 0
Bunting	2,240 0 0

For new Wesleyan Chapel, New Bury, Farnworth, Lancashire. Mr. T. Ormrod, architect. No quantities:—

Seddon	£1,180 0 0
Consill	1,150 0 0
S. & W. Coope (accepted)	1,035 0 0

For additions and alterations to Victoria-street Distillery, for Messrs. J. & J. Vickers. Mr. J. Calder, architect. Quantities by Mr. R. O. Harris:—

Lascelles	£1,877 0 0
Foster	1,775 0 0
Niblett	1,547 0 0
Curtis	1,454 0 0
Falkner	1,380 0 0

For additions to 7, Albert-road, Regent's-park, for Mr. William Tibb. Mr. J. Calder, architect. Quantities by Mr. R. O. Harris:—

Forster	£872 0 0
Turner & Sons	821 0 0
Lascelles	815 0 0
Curtis	796 0 0
Falkner	775 0 0
Foster	760 0 0

For parsonage-house at Ashley-green, Great Berkhamstead, for Colonel Smith-Dorrien. Mr. Morton M. Glover, architect:—

G. & J. Waterman	£1,350 0 0
Honour	1,285 0 0
Allaway	1,246 0 0
Harris	1,242 0 0
Chappell	1,217 0 0
Nash & Matthews	1,215 0 0
Smith & Fincher	1,207 0 0
Snell	1,175 0 0

For alterations and additions to stabling, &c., Charles-street, Hatton-garden. Mr. Shoppee, architect:—

Campion	£1,430 0 0
Brass	1,139 0 0
Wagstaffe (accepted)	1,125 0 0

For farm buildings and stabling at Sandstone, near Uxbridge. Mr. Shoppee, architect:—

Fassnidge & Son (accepted)	£997 0 0

For alterations and additions at Denham Mount, near Uxbridge. Mr. Shoppee, architect:—

Fassnidge & Son (accepted)	£445 0 0

For new administrative block for the Guardians of the Hackney Union. Messrs. Lee & Smith, architects. Quantities supplied by Messrs. Linsdell & Giffard:—

Stamp & Bowtle	£6,553 0 0
Crabb	6,080 0 0
Shurmur	6,030 0 0
Chessum	5,974 0 0
Bangs & Co.	5,970 0 0
Staines	5,863 0 0
Lewis	5,810 0 0
High	5,696 0 0
Forrest	5,676 0 0
Waldram & Co. (accepted)	5,656 0 0
Norris	5,600 0 0

For warehouse and factory, Burdett-road, Bow-common. Messrs. H. & J. D. Mathews, architects. Quantities supplied:—

Green	£1,900 0 0
Thomas	1,785 0 0
Shapley	1,725 0 0
Allen & Son	1,650 0 0
Blott	1,637 0 0
Waldram & Co.	1,523 0 0
Stamp & Bowtle	1,473 0 0
Vaughan	1,417 0 0
Hunt	1,408 0 0
Timewell (accepted)	1,363 0 0

For new warehouses, Queen Victoria-street. Mr. J. Wimble, architect:—

Brass	£13,266 0 0
Dove	13,035 0 0
Fish	12,170 0 0
Colls	11,958 0 0
Laurence	11,735 0 0
W. & F. Crocker	11,569 0 0
Killby	11,476 0 0
Scrivener & White	11,477 0 0
Morter	10,937 0 0

For additions to No. 26, White-street, E.C., for Mr. Huxford. Mr. John Groom, architect:—

Chapman	£330 0 0
Whitby	325 0 0
Loaring (accepted)	288 0 0

For rebuilding No. 13, Leonard-street, Shoreditch, for Mr. Edgar Kitchen. Mr. J. Groom, architect. Quantities by Mr. B. A. C. Herring:—

Knight	£1,192 0 0
Allen & Son	1,175 0 0
Crabb	1,050 0 0
Ennor	1,047 0 0
Bryant	1,020 0 0
Kelly Brothers	998 0 0
Scrivener & White (accepted)	963 0 0

For works at the following taverns. Mr. H. J. Newton, architect:—

Repairs at the Henry VIII., Stoke Newington:—

Brindle	£127 10 0
Hockley	120 0 0
Shurmur	108 0 0
Taylor (accepted)	92 15 0

Repairs at the Fortune of War, King's-cross:—

Taylor	£125 0 0
Shurmur (accepted)	119 0 0

Repairs at the Rose, Sands End, Fulham:—

Brindle	£116 0 0
Wells	111 0 0
Hockley (accepted)	94 0 0

Alterations at the Talbot, Little Chester-street:—

Darbey & Son	£619 15 0
Taylor	497 0 0
Hockley	485 0 0
Shurmur (accepted)	441 0 0

Repairs to the Victory, Kentish Town:—

Lamble	£109 0 0
Shurmur	108 0 0
Boden	96 10 0
Brindle (accepted)	85 0 0

TO CORRESPONDENTS.

Errata.—Dr. Barlow objects to our mode of spelling the name of a certain great painter, and wishes us to mention that in his MS. ("Dante and Michelangelo," p 251, *ante*), it was written "Raphael." The article *the* was accidentally omitted before the words "sublime Moses."

H. H. J.—H. C.—R. B.—A. V. W.—R. B.—T. & D.—J. G.—C. F. F.—Mr. C.—H. J. N.—W. & Co.—R. R.—F.—H. B.—T. M. R.—Feldspar.—Colonel D.—J. B. & Son.—J. A. & F. M.—E. A. H.—W. C. B.—W. & T. C.—H. & B.—S. B. (must look to his "Tutor's Assistant"; we cannot attempt to teach arithmetic. The answer is 11 in. and 8 parts superficial).—H. S. S. (next week).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, list of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

CHAPPUIS' NEW PATENT "LUMINARIUM."

BEST & MOST EFFECTIVE DAYLIGHT REFLECTOR.

PRICE LIST OF VARIOUS QUALITIES OF REFLECTORS.

Universal ..... 3s. 0d. per sq. ft.
Silver Fluted ..... 4 0 "
Argento Crystal ..... 5s. 0d. per sq. ft.
Luminarium ..... 6 6 "
Silver-plated Copper ..... 8s. 6d. per sq. ft.

Special Reflectors constructed expressly for special cases; also for artificial light, gas, lamp, lime, electric.

P. E. CHAPPUIS,
PATENTEE AND MANUFACTURER.
No. 69, FLEET STREET, LONDON.